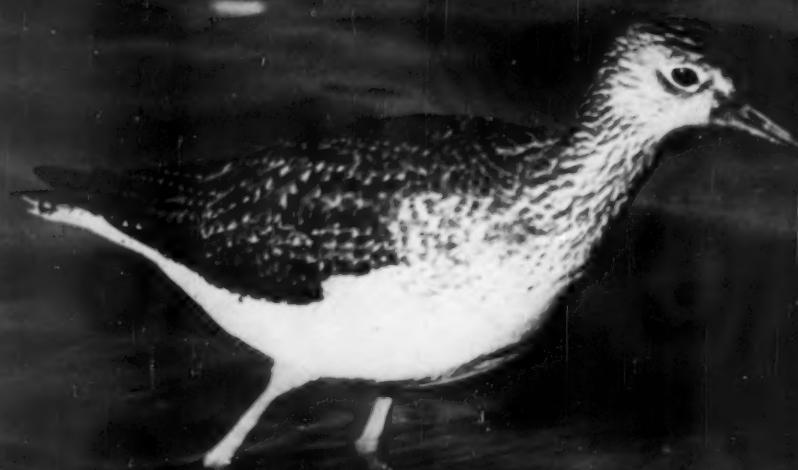


Audubon

JULY-AUGUST 1955

Magazine

FIFTY CENTS



THE GREATER YELLOW-LEGS
(See Page 154)

1905

THROUGH THE FIRST FIFTY YEARS

1955

Our Golden Anniversary



THOMAS P. MCELROY, JR. is curator of the Pequot-Subs Wildlife Sanctuary in Mystic, Connecticut. He is author of "Handbook of Attracting Birds" and numerous articles on conservation subjects. He is a member of the National Audubon Society, American Ornithologists' Union, Outdoor Writers' Association of America, and similar organizations devoted to the study and wise use of our natural resources.

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Volume 57, Number 4, Formerly BIRD-LORE

PUBLISHED BY THE NATIONAL AUDUBON SOCIETY

A bimonthly devoted to the conservation of wildlife, plants, soil, and water

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Kenneth D. Morrison, EDITOR; John K. Terres, MANAGING EDITOR; Andrew Bihun, Jr., ADVERTISING MANAGER; Frederick L. Hahn, EDITORIAL LAYOUT; CONTRIBUTING EDITORS: Arthur A. Allen, Henry Boston, Alan Devos, George Deck, Jr., Ludlow Griscom, Louis J. Halle, Jr., John Kieran, Robert Cushman Murphy, Haydn S. Pearson, Donald Culross Peattie, Roger Tory Peterson, Herbert Rovenel Soss, George Milsch Sutton, Edwin Way Teale.

AUDUBON MAGAZINE is published bimonthly by the National Audubon Society. Subscription \$3.00

per year in U.S., its possessions and Canada; 2 yrs.—\$5.50; 3 yrs.—\$7.50; Foreign, 1 yr.—\$3.25. Checks and money orders should be made payable to AUDUBON MAGAZINE. Editorial and advertising office, 1130 Fifth Avenue, New York 28, N. Y. Registered as second-class matter April 29, 1942 at the Post Office of New York, N. Y., under the Act of March 3, 1879. Copyright, 1955 by the National Audubon Society. Postmaster: If undeliverable, please notify Audubon Magazine, on form 3578 at 1130 Fifth Avenue, N. Y. 28, N. Y.

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Letters

Raising a Brown Thrasher

One morning a woman handed me a wet crumpled baby bird, which she had taken from her cat, and asked me if I would care for it. Although I was sure it was about to gasp its last breath, I put it in a cage, where it huddled, a picture of misery. I fixed the yolk of a hard-boiled egg mixed with broken bits of whole-wheat bread, and moistened it with warm milk. The bird loved it, and with this mixture interspersed with angleworms, and cherries, it grew and thrived. At first, food was put on a toothpick and shoved down his throat, but he soon learned to pick it up.

As its feathers grew, it began to show wing-bars, and from having no tail at all, a long tail sprouted and grew rapidly. The little bird was growing up, and it became a brown thrasher. He soon grew so big that I decided he must have his freedom. One morning, I took him to a neighboring field but he refused to fly away, just flying from my shoulder to my daughter's shoulder, back and forth. Finally, we put him on the branch of a small tree and drove away.

Late in the afternoon, my daughter and I went back to see how he was getting on. As soon as I whistled, he came rushing to me. The bird's fame spread throughout the neighborhood. Many came to see if it was really true that a brown thrasher, living a perfectly free life, would come, upon hearing my whistle, eat from my hand, and sit, perfectly contented, on my knee or shoulder for minutes at a time.

We kept him another week, when some friends of ours who were spending the summer at a camp in the mountains, said that they would love to have the bird. It was an ideal place, sunny and warm, with a clear mountain brook flowing through the yard. We took him there. He had complete freedom, but stayed near the camp. He would always come to sit on my shoulder whenever I visited the camp and whistled for him.

I have never known a bird so fond of people. One of his endearing ways, when sitting on my shoulder, was to cuddle up against my neck, puff up his feathers, and snuggle down, perfectly happy and contented.

He became very fond of an old gentleman at the camp who spent much of his time sitting in the sun. Our bird

would fly to him, sit on his hat or shoulder, and the two would often enjoy an afternoon siesta together. He flew away one morning late in September and never returned.

MRS. SALOME BIXBY ROSS
Bennington, Vermont

Editor's Note: Dr. Lucretius H. Ross sent us this account of his late wife's experience in raising a thrasher. Mrs. Ross died since this was written. We found it so interesting that we wanted our readers to know about this personable bird and its attachment to Mrs. Ross.

Cardinal Feeding With Other Birds

This past winter, at Greenfield Hill, Connecticut, we have had a male cardinal coming to a concrete porch outside the house where we scatter feed for juncos, chickadees, and song sparrows. The cardinal feeds on the porch with the rest of the birds. Somebody said they had never heard of a cardinal feeding with other birds.

FAITH LANMAN
Bellport, L. I., New York

It is not unusual for cardinals to feed with other birds, although in my experience they usually prefer to feed by themselves. This past spring, at Herbert

L. Stoddard's plantation near Thomasville, Georgia, I saw at least five cardinals, both male and female, feeding in and among a flock of about 100 goldfinches and pine siskins at a window shelf feeder.

One of the interesting things about birds is that you can study them a lifetime, and just when you conclude that a certain kind of bird will always behave only in one way, one of them will suddenly do just the opposite to what you expect. This may be embarrassing to the person who thought he knew the bird's habits thoroughly, but to the field naturalist, with long experience, there are really no surprises in nature. She is always unpredictable, and her

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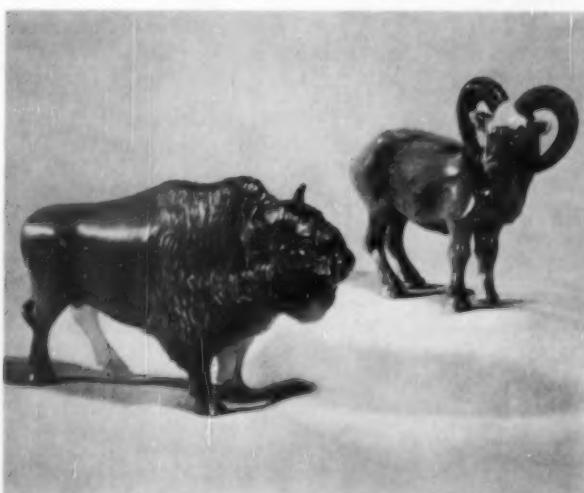
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fascination lies in her very refusal to be stereotyped, to be stuffed into a drawer, and expected to remain there.
—JOHN K. TERRES

A "Homing" Blue Jay

Last Memorial Day week-end (1954), I noticed a tiny moving bit of feathers under a pine tree in our garden. Upon closer inspection, I discovered a small bird.

I called my husband and he picked up the bird and took it into the kitchen. Unmistakably, it was a blue jay with an injured wing and a leg that was quite swollen. We lined a pint-sized berry box with soft paper and after an hour or so, the bird perked up a little. The diet to offer our protege was perplexing. Finally, we cut bacon into very thin strips and gave them to our peeping, open-mouthed bird.

He thrived on his bacon, milk, and bread the first week and hopped around in lively fashion, despite his handicaps. Since the family nest was still intact and his family still around, we thought we'd place him back in the nest. However, by the Saturday after Decoration Day, the nest was demolished and the blue jay family gone.

That left us with our orphan. We placed him in a shallow carton after he outgrew the berry box, and kept him in the house for about two weeks. Then my husband made a cage of wire mesh

about two feet square — no top — and about 18 inches high. This had a perch across. After about a month he could get out of this cage but he never wandered far from the back patio, near where we had the cage.

By July, he was a good-sized bird. He often sat contentedly on my husband's shoulders while he walked about our yard. One of his favorite spots was the clothesline. Here he would sit for hours. He was never silent; for this reason we took him into the house each night—we were afraid cats might get him. We added egg yolk and dogfood to his diet.

On July 19, we took our jay to the National Audubon Society's Roosevelt Bird Sanctuary, Oyster Bay, Long Island, New York. Mr. Callaghan, the director, placed him in a large enclosure and we hoped the bird would be happy there—where he could get the bird foods he needed and have feathered friends instead of humans. But the jay had different ideas. It is over 30 miles from our home to Oyster Bay. On August 19, just a month later, I heard some very persistent chirping and there on my upstairs porch was our jay. I coaxed him to the table and he took some food from my fingers. His foot was almost straight and his 30-mile flight testified to his wing being healed. Most of our neighbors knew about him and he gets food from about six of them. He stays close to home and gets his food from the table if I am not around. Although he occasionally alights on my shoulder, he will not allow me to pick him up. He flies from tree to tree. If I am in our front yard, so is he; if I am in the back, there, too, is our jay.

By December, our jay had a jay friend, and the last time we saw him, the friend was scolding because our jay was so near us. I am not sure but I suspect "he" (our jay) should have been called "she."

Mrs. M. HOWELLS
Hollis, L. I., New York

Eighty-Eight-Year-Old Bird-Watcher

My bluebirds came back in January and February, then March 3 they began to build their nest. They made 24 trips with nesting material, then sat on the fence, did a lot of talking—must be Greek or Latin, I could not understand what they said. Other birds are at the feeder in a tree by the kitchen window—cardinal, house wren, titmouse, hairy woodpeckers, catbird, mockingbird, brown thrasher. The chewink eats on the ground; sometimes it gets to the feeder.

Now a trick the mocker played. It came to the feeder about 9 a.m. to get breakfast. I never knew mockers to bother other birds. This one would not let any bird eat while it was there. I

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went to the window and told it to behave or it would miss breakfast some morning. Have not seen it for three days.

There are many different birds here winter and spring. We have only one pair of doves. When I was a small girl on the old farm home my sister and I would climb up in an apple tree to watch the dove feed its young.

MARY J. COOMES

Kirk, Kentucky

Editors' Note: Miss Mary J. Coomes is 88 years old. She has been afflicted with arthritis, which makes it necessary that she tend the flowers in her garden while sitting in a chair. She insists that she is not an invalid—just that arthritis makes her hands and knees stiff. Miss Coomes is also a keen observer of birds. We think our readers will agree that she is a remarkable person.

Reader Comment

The article, "Needs of our Parks and Forests," by Ernest Swift, in the March-April 1955 issue of *Audubon Magazine*, was one of the greatest I have read recently.

PHILIP N. STEFFEN
Chicago, Illinois

Thanks for bringing us via the *Audubon Magazine* such interesting articles and suitable advertising material.

MR. JAMES E. MAHER
New London, Connecticut

Audubon Magazine gets better each issue. There is so much of interest in it.

RAYMOND J. MIDDLETON
Norristown, Pennsylvania

Correction

In "The Journeying Butterflies" (*Audubon Magazine*, September-October 1955 issue), I did not say Point Pelee was on the shore of Lake Ontario, as indicated in the "Letters" column, page 100 of the May-June issue. Point Pelee is on the northern, or Ontario, shore of Lake Erie, rather than on the southern, or Ohio, shore. It is in the province of Ontario.

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FIELD TRIPS— The Key to Nature Study

By Charles E. Mohr*

THE inspiring admonition of Louis Agassiz, "study nature, not books," has been the guiding philosophy of virtually all nature study leaders from the day of Agassiz to the present.

But despite this devotion to one of the most basic methods in nature education, too many members of our bird, nature, Audubon, and other conservation groups are largely "armchair naturalists."

Despite the tremendous upsurge in interest in nature, attested by the popularity of the Audubon Screen Tour lectures, the Walt Disney True-Life Adventures, *Life Magazine's* features on "The World We Live

*The author is director of the Audubon Center, Greenwich, Connecticut.

In," and the multitude of natural history books pouring from publishers' presses—not enough persons are learning about the out-of-doors *first-hand*!

The ideal way to get to know about the natural wonders would be to have a wise old naturalist invite you to go walking with him. Together you would see a multitude of fascinating things. And he would tell you all about them.

But there are too many people and not enough wise old naturalists. We still need the direct exposure to nature, but we must find thousands of leaders, and train them to take not one, but a score or a hundred persons with them into the field. We must show them how to find fun, adventure, and wisdom out-of-doors. More important, we must

teach them how to make their own enthusiasm contagious, and how to alert others to the fascinating facts and interrelationships of nature.

That is a job which is being done in the National Audubon Society Camps, through the Massachusetts Audubon camps and camp-outs, through National Park Service and museum leadership training programs. Still we are only scratching the surface. There are hundreds of other museums and Audubon Societies, Scout Councils, and conservation groups which could pool their resources for leadership training.

Aside from the problems of organizing and presenting such a training course, which must be worked out on the basis of local leadership and natural resources, there are certain tested techniques of the experienced nature leader which might well be adopted by anyone who hopes to share his or her interest with others, out-of-doors.

Remember that *you* have a good time when you are on a field trip. You must somehow manage it that on every field trip which you lead, *others will have a good time*. If you succeed you will be able to create a *liking* for the out-of-doors, and a desire to see its essential features preserved. You can attain this goal if you conscientiously follow these suggestions:

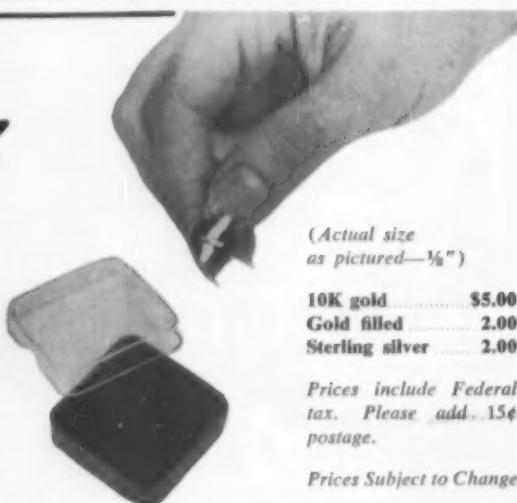
1. *Plan each trip carefully with a definite, attainable objective.*

Go over the ground *in advance*: consider sun, tide, wind, transportation, etc., in selecting route. Plan the trip to take advantage of seasonal features. Always have an available substitute—an interesting cliff to visit; a variety of evergreens, oaks, etc., in a park; a tree stump with a story to tell; different habitats to be compared—if the main objective cannot be attained. Never ignore unexpected occurrences.

2. *Be alert and enthusiastic.*

Be *quick* to point out birds and other animals. Constantly try to "pinpoint" a bird's location so that no one can miss spotting it. Say, "It's at 'ten o'clock' in the tallest oak." "It is 15 feet above the ground," etc. Share the excitement of the beginner's

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discoveries, his "firsts." Teach others how to enjoy the natural beauty of a mountain top, a swamp, a woodland, or a fertile field, by recognizing the unique features of each. Remember that natural phenomena close at hand often are as remarkable as those in far places.

3. *Keep the crowd together.*

Walk at the head of your group but let part of the crowd pass you when you stop to make an explanation so you will be near the center of the line. Make sure that everyone can see and hear. If some straggle behind, ask them to bring you some specimens.

4. *Create a good teaching situation.*

Sit down at intervals. Demonstrate advantage of sitting still—birds come to you. Display specimens gathered en route and compare them; carry on most discussion, note-taking, and review while seated. Encourage questions—make sure everyone heard them and the answer. Use "Twenty Questions" and other games during the trip to review things seen. Speak distinctly. Ask, "Can you hear me?" Spell out names which are strange or hard to catch.

5. *Discover the level of your group and adjust to that level.*

Don't "show off" by using scientific terms if your group won't understand them. Don't ignore the common things which may be unfamiliar to your group; don't enthuse only over the rarities. Never let anyone feel that his question is foolish—say "That's a good question!" Give clues if you want the members of the group to figure out answers for themselves—don't let them flounder.

6. *Don't be satisfied just to name each specimen.*

Learn interesting things about their names, uses, etc. It is as hard to remember unrelated plant names as to recall names of a dozen persons you've merely met. Call attention to and interpret be-

havior of wildlife. Tell the "tricks of the trade," such as field marks and mannerisms, that aid in identification. Relate interesting experiences, if possible—or incidents you've read about. Identify the habitat you are seeing, look for evidence of succession, and try to get across the idea of continuing change. What lived there in the past; what does the future hold in store for it? Where do the inhabitants spend the winter?

7. *Experience nature through all the senses.*

Take advantage of inactive moments to listen for sounds in nature; close eyes; try to identify familiar objects by touch alone; by taste and smell. Look for distinguishing differences in color, shape, texture, etc. Use Rutherford

Continued on Page 187

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Hell's Canyon and the Snake River. Photograph courtesy of the Bureau of Reclamation.

NATURALISTS DISCOVER HELL'S CANYON

Opportunity to ride down a wild, little-known canyon on the Idaho-Oregon border may not last. A big power dam has been planned for one of the deepest gorges on the continent.

Oliver McNabb, mailman of Hell's Canyon since July 1950. Photograph by the author.



By Bob Forbes

"DON'T the birds ever get tired?"

"Where on earth do so many of them come from?"

"What are they trying to do? Skim as close as possible to the river without taking a bath?"

So run the queries addressed to the world at large by vacationists as they take the boat trip into Hell's Canyon—to the terminus—a sand bar beside the Snake River 95 miles south of Lewiston, Idaho.

Innumerable cliff swallows, which dart by close to the water on all sides, are the birds exciting curiosity. It seems as if one large flock of swallows follows the boat all the way. Cliff swallows can be seen as the boat pulls out from a Lewiston dock. The birds are still swarming over the river 12 hours later, upon disembarking at Hell's Canyon Lodge.

The gorge of Hell's Canyon is deeper by a thousand feet than the famed Grand Canyon of the Colorado River. It is also the most scenic and formidable array of jutting crags, rocky cliffs, and lava peaks for hundreds of miles around.

The unapproachable nature of the chasm, however, allows only one means of entrance—by boat southward from Lewiston, against the turbulent current of the Snake. This fact has made the most unusual delivery service—by boat—of 32,500 regular routes of the United States Post Office, R.F.D. branch.

Oliver McNabb's Inland Navigation Company of Clarkston, Wash-

Rapids in Hell's Canyon seen from the mail-boat, "Imnaha." Photograph by Ted Cowin.



Cliff swallow nests on the walls of Hell's Canyon. Photograph by John Warren.

ington, across the Snake River from Lewiston, Idaho, has contracted to deliver letters and supplies to isolated prospectors, sheep-herders, cattle ranchers, and trappers. These people

include "America's most isolated family," the Allen Wilsons, living in Idaho 25 miles beyond the end of the boat run. Oliver will also take travelers with him on his 50-foot

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Hell's Canyon Lodge, 92 miles upstream from Lewiston, Idaho. Photograph by the author.





"The greater yellow-legs is one of the largest and most striking of shorebirds." Photograph by Allan D. Cruickshank.

THE GREATER YELLOW-LEGS

"The whistle of the greater yellow-legs, loud and insistent, is easy to imitate." Photograph by Allan D. Cruickshank.

The mellow whistle of the greater yellow-legs is a reminder of the salty fragrance of coastal marshes, and of the migration of shorebirds that starts before summer is over.

By Henry Marion Hall

THE flight notes of shorebirds, however humble as melody, have a magic of their own. Sufficiently individualistic to enable anybody to identify a species at considerable distances, they carry the listener up into the air with them, whether in the ruddy dawn, at midday, or in the thickening dusk. It is not necessary to see the bird itself. Just a ventriloquial whistle or two makes us visualize rippling wings. We listen a moment and share the mystery of migration with them.

Take the triple descending spiral notes of the greater yellow-legs



snipe.* Those cheery, confident pipings sound as free and natural as voices of the air. It is impossible to hear them without seeing brown sea-meadows, green salttings, and tidal creeks twisting toward the broad blue buckler of the sea.

The salt fragrance of marshes grows strong in our nostrils; we hear the breeze sighing through the sedge, or feel it fanning our cheeks. Such sounds, as much a part of the tidal world as the minnows which glisten in the shallows, not only arouse all our five senses but touch chords in our subconscious memory running back to childhood.

The whistle of the greater yellow-

*Greater yellow-legs, *Totanus melanoleucus* (Gmelin); other names—greater tattler; tell-tale; cucu; big yellow-legs; winter turkey-back; horse yellow-legs; winter yellow-legs, etc.

legs, loud and insistent, is easy to imitate. I have repeatedly drawn down wandering ones which passed somewhere overhead while I was fishing. The birds seemed to crave company and would circle over and over again, trying to locate their calling brother. Sometimes a yellow-legs would flounce back and forth for several minutes, whistling inquiringly, but always ready to come back and be fooled again.

Unfortunately for these handsome birds their music has often cost them dear. In the old days tin snipe-calls used to be sold in sporting-goods emporiums, but they were really unnecessary. Any "Down East" boy could mimic the notes of a yellow-legs convincingly. Occasionally a bunch of prime birds, trailing their long legs, would plane in to his

wooden or tin decoys on curving wings, suffer casualties, and zig-zag to safety. They often returned for another look when skillfully called.

This gullibility proved a fatal weakness. Another handicap was their slowness as compared with swift-driving, black-bellied plover. Not that they were invariably easy to stop. When fired upon they would occasionally flare or veer as unpredictably as jack snipe, or Wilson's snipe, particularly in a high wind, when many escaped. They were plump, delicious prizes, although gourmands claimed they were never quite the equals of woodcock or curlews as food.

The greater yellow-legs is one of the largest and most striking of shorebirds. It averages 14 inches long, nearly three times that of the least

Continued on Page 166

"Migrating along the sea coast in spring and fall, greater yellow-legs are partial to drowned flats and tidal basins." Photograph by John K. Terres.



Drama at the

A watering place in a dry country brings a

By V. W. Turbiville

FOR me, my most delightful pastime is to keep watch at some isolated watering place, where I can watch the wild things that come to drink. To do this successfully, you must be concealed so that no particle of your clothing can be seen. You must also take advantage of the wind, if there is any. Be sure that it is blowing *toward* you, and not away from you toward the animals you are trying to stalk, for this will tell them of your presence more

quickly than if you stood in plain view of them.

In very dry weather, some animals will come to a waterhole almost any time of the day. To see the greatest number of birds, mammals, reptiles, and insects, it's best to select your hiding place about noon. Then wait for the show to begin. Usually, in dry country, you will not have long to wait. If you are in wooded country, there will probably be many squirrels, and they will come very early for their drink. Jack-rabbits, too, are often early visitors, but cottontails and swamp-rabbits come later, often waiting until after sundown, especially if there is an early moon. It is usually four or five o'clock before deer start to appear, and these are does, fawns, and the

younger bucks. Old bucks are always late; if the moon is full, they may wait until two or three o'clock in the morning. As for turkeys, it is very seldom that they come for water in the afternoon. They are early morning drinkers, usually going to water directly from their roosts. Other birds drink almost any time, many of them drinking all through the day.

But the afternoon is still best. One afternoon, I counted, at a Texas waterhole, 17 animals—eight birds, two rattlesnakes, and one coachwhip snake, all drinking from a small dirt tank at the same time. (The rattlers were not together, nor drinking at the same spot, and I noticed that birds and other animals kept a respectful distance from them.)



Waterhole

unusual variety of animals together

In the course of an entire afternoon, I have seen hundreds of animals come for water—birds, deer, wolves, coyotes, and bobcats. Once I watched a mother skunk with 10 half-grown "kittens," following behind her in single file, walk to a waterhole and all line up for a drink. Even an occasional turkey hen with her poult, will move to the water in that cautious way that a turkey uses in all its comings and goings.

I shall never forget one Texas waterhole that I watched. At the time, I had charge of a sizeable ranch, and since the owners ran only steers, I had very little work to do. Riding the range, keeping the fences in repair, and making an occasional check on the 1,500 aged steers re-

quired very little of my time, leaving me ample opportunity to indulge in my greatest pleasure—observing wild-life.

About five miles from my camp a good spring flowed from some rocks, forming a large basin of water. Because no habitation was near, this pool made an ideal watering place for the cattle, and also for the many wild things that lived in the vicinity. On one side of the pool was a bluff, or cliff, which was possibly 40 feet high; on the other side, there was a little sandy shore that led up to higher ground, which had scattered timber on it as far as the eye could see. The cliff made an excellent observation point and a good place of concealment. During the many, many hours that I spent con-

cealed on this bluff, I saw thousands of animals come to drink, to prey, and to be preyed upon. If I had had no other pleasures during life, these experiences would be ample payment for having lived.

Of course, I saw my share of nature's dramatics. Whenever I would see the great golden eagle hanging like a speck high in the heavens, I would know for sure that some of my friends at the waterhole would soon furnish a meal for her, or for her eaglets waiting with hungry mouths in a nest on a peak that was miles away. She never missed, that eagle. With folded wings and the speed of light she would shoot down from the clouds to pounce upon some unlucky bird, beast, or reptile. There would be the thrashing of a snake, the scattering of feathers from a bird, or the squealing of a rabbit in its death throes. The eagle would then fasten her talons firmly around

Illustration by Walter Ferguson.



the victim and fly away to the cliffs, where I knew that she had nested for many years.

Sometimes, too, a wily coyote would entertain all at the waterhole with his showmanship, carrying on clever antics in full view, making a deliberate effort to attract attention. All the while, its mate would be wiggling along on its belly through the grass and weeds, finally pouncing upon some poor unsuspecting rabbit or the like. The showman's act would then be over; the first coyote would dash off to share in the meal that its trickery had helped to capture. The age-old drama—the survival of the fittest, the strong preying on the weak—was almost constantly enacted before my eyes. Woe be to anything that was crippled, or that was in a weakened condition! Before reaching the life-giving water, it almost always made a meal for something.

Hawks found this place an ideal feeding ground, preying upon the numerous smaller birds that came there. The small birds, in turn, preyed upon the insects, and the insects upon the weaker of their kind. Late in the evening, the great horned owl, gliding silently like a wraith on silken wings, would appear out of the shadows to seize a rat or a rabbit and fly to the top of an oak, there to enjoy its evening meal. The paisano, or roadrunner, with the patience of Job, would wait for a lizard, or for one of the small water snakes. When lizard or snake ventured out on the sand, as they often did, it was just too bad for them. With one stab of its long beak, the roadrunner would pierce the snake at the base of its skull, and soon the snake would be going down the bird's gullet in fast gulps.

It was at this waterhole that I became acquainted with "Time-keeper," as I called her. "Time-keeper" may not sound like an appropriate name for a snake, but for this particular one I could think of none better. Time-keeper was a large rattlesnake about six-feet long, with 14 rattles and a button. I called her "Time-keeper" because on the many, many occasions that I saw this snake, she always appeared at the waterhole at almost the same time. There was never more than four or five minutes' variation in the time of her arrival. I would time her with my watch, day

after day, and usually she appeared at exactly the same time. Down across the sand, her heavy body forming huge S's, she would push her way to the water, where she would drink like a cow. After getting her fill, her girth increased around the middle, she would go back the way she had come, soon losing herself in the weeds and grass. Although dozens of rattlesnakes came to this waterhole, none of them was so impressive as Time-keeper. Sometimes, before she reached the open ground, the warning cries of the birds and the scolding of the squirrels were enough to let me know that she was on her way.

On the many occasions that I observed this snake, only once did I see her coil for a strike. That happened when an over-sized, broad-striped skunk, apparently with all the time in the world, deliberately, it seemed, walked in front of her. Coiling, she poised herself for the strike. The skunk, unperturbed, sauntered on its way with never a backward glance. The whir-whir of the rattles filled the air, giving out that blood-chilling sound that is frightening to both man and beast. Every animal, except the skunk, scurried for cover, and I, myself, felt good in the knowledge that I was perched in safety atop a 40-foot bluff.

The whirring of the rattles continued. Still the skunk ambled along, as if no six-foot rattler was going to scare him. Finally old Time-keeper's fear or anger subsided! (fear or anger are the only things that will cause a rattlesnake to rattle), for she uncoiled herself, went to her regular drinking spot, and filled herself as usual. Then, as usual, she returned the way she had come. Soon small birds were flitting about, squirrels were barking, and crows were calling. All the other creatures, that but a moment before had remained completely silent in their concealment reappeared—some drinking, others searching along the bank of the pool or in the shallow water in search of prey, with the fearful sound of the rattles apparently forgotten.

I have no idea how long Time-keeper watered at this hole. For a number of years, however, I spent all my free time concealed on the bluff. Never a day did she miss when I was there. Like many others, she became a familiar "friend" that I could recognize at first sight.

FEEDING

By Cass Payne

WHEN I bought the cabin in northern Michigan, it contained equipment for feeding hummingbirds: several bottles—the kind used for serving "coffee cream" in restaurants, which I found inside—and a pronged branch nailed to a corner pillar of the open porch. I removed the colored paper from the bottles and left them bare. Then I ran a wire around the neck of each bottle, with a loop for suspending it, which made it easily removable from the prongs for refilling. I cleaned the bottles before each refill.

The "nectar" I put in the bottles was white sugar and cold water—equal parts—which I stirred until the sugar had dissolved. One morning, when I was especially busy, I merely added a bit of water to the half-inch depth of syrup left in the bottles. Later I was sitting at the table writing when one of the birds came dashing at me, just missing my head as she passed. She repeated this several times before I realized that she was protesting the watery nectar. I made a fresh supply and never again tried cheating the hummers.

Usually there were two bottles on the branch, but I never saw two birds there at the same time. If one was drinking and another came, the first left in a hurry. Then one day I discovered a "dominant" bird. She would come to the bottles, drink her fill, then hide in the big hemlock close by. Whenever another bird came, she would dart out and chase her away, retreating at once to her hideout. Several times I thought she had wounded her victim because of the loud squawk I heard. I wished for some way to frighten her without harming her.

I finally had the satisfaction of seeing her routed by a smaller bird. She was in her hiding place. Several would-be diners had been chased off after only a hasty sip, or none at all, when suddenly a medium-sized bird, ragged but jaunty, dashed up. She lit on the branch near a bottle, shook herself, and

Ruby-throated Hummingbirds

looked around defiantly. The dominant one flew out but the ragged one did not flinch. She had her perch and the dominant one actually flew away into the woods. Immediately a third bird came but she was soon convinced that the feeding station was definitely occupied and she also flew away.

And so the ragged one had a leisurely meal, after which she flew to a twig of the hemlock and cleaned her bill, wiping it against the twig 8 or 10 times and occasionally using her tongue, as a human might lick off sirup around the mouth. Another time I watched one doing her feathers as a hen does, except that the bird's tongue was often sticking out a bit as her bill came out of the feathers.

One day I decided to try improving social relations among the birds by enlarging the dining facilities. I nailed a branch to the next pillar and hung three bottles on it, making five in all. Aware of such human examples as the California Gold Rush, I suppose I should have known better. Whereas the birds had been coming one or two at a time, there was now a grand squabble—five or six at a time. But none had a chance at the sirup. They flew round and round, diving at each other and mak-

ing queer noises. Such a plentiful supply had apparently driven them all crazy. The confusion was so disconcerting that I removed the three new bottles. Later I regretted having been so unscientific. Perhaps if I had waited, some order would have emerged.

I always wondered what took the place of the sirup bottles before and after the 10 weeks I spent at the cabin. Once I arrived the morning of June 15 and put the bottles out at once. By two o'clock I had seen four different birds drinking.

Once I saw 11 different birds in two days. Of course, they all looked alike at first, especially since only the females came. But soon I began to notice distinctive markings, not only in feather colorations, but in scars. I kept a pad on the table and wrote descriptions.

1. Large, slim, angular, nervous; sits on bottle edge while drinking but flies out a yard or so after each sip; feet visible in flight.
2. Shaggy, diagonal scar across breast; comes directly to bottle on which she sits and drinks until finished; feet hang down in flight, especially the right one.
3. Very small; breast all light, row of scars down left side; white crescent under wing; never sits on

bottle; feet hidden in flight; visits several spider webs on hemlock before leaving the scene.

4. Large, neat, no scars; white fringe of feathers back of legs, low "neckline"—row of brown feathers across breast like a necklace; feet hidden in flight.
5. Small, slim, sleek, no scars; serene-looking; quite distinctive chic, in fact; feet hidden in flight (hers would be).

One day two of the birds sat in the hemlock near each other—quite unusual. Number Five was on an upper branch and Number Two on a lower branch but farther out. Five was sitting quietly but Two preened herself and ruffled her feathers with a look-who's-here attitude. When Five paid no attention, Two dashed out and back to her perch several times. Still no result, so she began a sort of chase, rapidly back and forth, nearer and nearer to the upper perch until finally Five yielded to the baiting and flew off with Two in fast pursuit.

I had seen only one male ruby-throated hummingbird during the four summers. Then one evening at twilight I saw my second one. I had read somewhere that the throat patch, or gorget, is not really red but shows red in certain light reflections. This meant nothing to me, but now at last I was to know.

I had turned on the light about six feet from the bottles and was sitting at the table. Suddenly there was a dark-headed bird, a male, sitting on the lower bottle, and his throat was not red. It was black. Then he turned his head slightly, and the gorget became a living coal—no ruby ever glowed so radiantly. The bird sat for some time, apparently not so interested in drinking as in showing off his changeable plumage. I can recall only a few such perfectly satisfying moments in my life.

I wonder why the males stay away from the sirup bottles and where they keep themselves. Are there fewer of them? Or do they simply avoid female neighborhoods to maintain their status as non-working fathers?

Photograph of female ruby-throated hummingbird by Allan D. Cruickshank.





THE MASKED BANDITS IN OUR HOME

"Two masked bandits opened the door and came into the living room of our Texas home."

"Shirley, our three-year-old daughter, played with them as though they were kittens or puppies."

Mischiefous and intelligent, raccoons make stimulating pets. The author and her family gave theirs freedom to roam where they pleased.

By Dorothy Hatfield

TWO masked bandits opened the screen door and stepped into the living room of our Texas home, looking slightly mischievous and not at all sinister, as bandits should. They weren't interested in the loot normally desired by most bandits; they were in search of my sugar bowl! Our bandits were Frankie and Johnnie—two raccoons.

We'd had Frankie and Johnnie, a male and a female from the same litter, since my husband brought them home to our three-year-old daughter one evening. Then they were tiny balls of fur, so young they hadn't yet learned to walk, and their

All photographs by the author.



black masks and tail rings were still pale.

We first fed the baby raccoons milk from doll bottles, using the same condensed milk-water-Karo formula that I gave my little girl when she was a baby. It must have been satisfactory because the little "coons" began to grow. We then switched from the doll bottles to baby bottles and as Frankie and Johnnie grew older they learned to lap milk from a saucer.

The diet for our pets was kept, as nearly as possible, in accordance to the diet of wild raccoons. My husband caught crawfish, minnows, grasshoppers, and other insects for them. In the trees of our yard, they could find acorns and catch insects. To this natural diet, we added fruit, milk, meat, and occasionally sweets, for we discovered they loved candy, sugar, and "cokes."

Seedless grapes were a favorite with Frankie and Johnnie and they peeled the skin away before eating them. Grapes seemed to be the food most frequently washed by Frankie and Johnnie. Why we never knew. My husband and I had successfully raised pet raccoons before and the old story about raccoons washing their food before eating had been disproved. None of our pet raccoons was that fastidious, but they would wash their food if we placed it in a pan of water. Although Frankie and Johnnie had a basin of water always available for food washing, they would, often as not, eat without washing it. Nearly everyone who knew of our pets would ask us if

"Grapes were the food they most frequently washed."



"Before they were two months old, they climbed the oak tree by our front door."

Frankie and Johnnie washed everything before eating. We told our friends that this old story was an exaggeration, according to our experience.

From the beginning, we decided we would not restrict our pets' movements. They were never chained nor kept in a pen, but were given freedom to roam as they pleased. While very small, Frankie and Johnnie were content to sleep in a box inside the house, but before two months passed, they preferred to climb the oak tree by our front door, then get on our roof where they slept nestled under the eaves.

Nocturnal by nature, the coons napped during the day (about like a house cat) and played at night. Often we could hear the raccoons on the roof, purring and playing, tumbling and boxing like two kittens. Frequently they would stop playing

and plot a raid on my kitchen. They would open the screen door with their claws and sneak inside the house. If we heard the door slam, we knew the bandits had made another raid. It took our pets no time to distinguish the flour canister from the one containing sugar. They learned where the refrigerator was located (and its contents), and just what maneuvers were necessary to swing open the food cabinet doors. Needless to say, we soon learned to lock the screen doors, to have "coon-proof" latches installed on the cabinets, and to keep in mind that our two bandits were, at all times, ready to "get into something."

Mischiefous but intelligent, raccoons make stimulating pets. We had no trouble taming Frankie and Johnnie and they were so good-natured our three-year-old daughter, Shirley, played with them as she





"It took our pets little time to learn the difference between the flour canister and the one that held sugar."

might have played with kittens or puppies. Although the raccoons were unsuspicious of us, they were instinctively distrustful of strangers, especially people who seemed to fear them. I've had many guests become frightened upon the entrance of our pets, though they never bit any strangers. Our pets, for some reason, became friendly much more rapidly with strange children than with adults, and they brought a number of children much happiness.

Frankie and Johnnie loved every

minute they were allowed to spend in the house. They snooped, investigated every crevice, felt and patted everything. Little black paws would wiggle under chairs, in the bookcases—everywhere. My jewelry box was a treasure chest of enjoyment for them. They would take my earrings and roll them between their paws, beady little eyes, all the while, beaming at the glittering wonders of civilization. Coins, bobby pins, anything they could pick up and hide, were missed only to turn up in some

"Although they always had a basin of water for food washing, they often ate food without washing it."



illogical place later on. Shirley's stuffed toys suffered numerous attacks, her marbles were hidden, her dolls scratched.

Not all of their antics were pleasing to me, however, if I might have created that impression. As puppies chew shoes, and kittens tear stockings, our raccoons ate my favorite ivy plants, licked from the sugar bowl, chewed up my brooms, hid my earrings, and, in general, raised havoc in the house if left alone. Intelligent, sensitive to the tone of the voice we used, they knew just what they could do to avoid a scolding or what would bring one on.

As Frankie and Johnnie grew, they deserted our roof for a hollow log in a nearby pasture, not far from our home. From then on, we saw our pets only at night. We had kept the raccoons only five months and regretfully we knew they were growing away from us, relying on their own resources, instead of ours. We felt, though, that no matter how much we missed our pets, they belonged in their natural habitat. They had, while living in our home, brought us our share of enjoyment and supplied us with enough conversational material to last for years.

The frequent night visits slackened and weeks passed without a visit from our pets. We reconciled ourselves to the fact that, at last, they had reverted to the wild. We adopted a stray house cat in the hopes we could forget, as gracefully as possible, our Frankie and Johnnie.

A few weeks ago, I heard the screen door rattle in a familiar manner. I rushed to the door, hopeful, and there stood a large raccoon, resplendent in its silky winter coat. I called to it and finally it stepped into the house, high-strung and wary. It was Frankie, the male coon, and once inside, he headed straight for the kitchen and stood up by the refrigerator. His wild life hadn't erased the memory of how convenient it was to go to the refrigerator and beg for a handout. I fed my pet, and after awhile reluctantly opened the door and stood watching, a big lump in my throat, as the coon melted out of sight. Since then, Frankie has returned many times, at least once a week, but he is always alone. We don't know what happened to Johnnie, the female. Perhaps she mated with a wild raccoon.

In the Beginning—

An Early History of Our Origin and Growth

(Part III)

Editors' Note: In our Golden Anniversary year, we believe that our readers will be interested in reading a republication of a report, "History of the Audubon Movement," by William Dutcher, which appeared in the January-February 1905 issue of *Bird-Lore*, the predecessor of *Audubon Magazine*. It tells of the origins and early growth of the Audubon movement, which culminated in the incorporation of the National Association of Audubon Societies in 1905. Later on, the name was changed to National Audubon Society. Since the 1905 issue is unavailable to most of our readers, we are reprinting this report in installments in this and forthcoming issues of *Audubon Magazine*.

EARLY LEGISLATION

TO CONTINUE our review, early in 1885 the Legislature of New Jersey passed a bill, introduced by Senator Griggs, forbidding the killing of any nighthawk, whippoorwill, tern, gull, or any insectivorous or songbird not generally known as a game bird. This was probably the first comprehensive bird law passed, in that it protected all the birds that could not strictly be considered game birds.

SONGBIRDS AS FOOD

During the same year Mr. Sennett, of the first A. O. U. Protection Committee, published in *Forest and Stream* an article entitled, "The Lesson of a Market," in which he gave a list of the non-game birds that he found exposed for sale in the Norfolk, Virginia, market. It consisted of 26 species, among them the robin, catbird, brown thrasher, bluebird, yellow-rumped warbler, waxwing, red-eyed vireo, eight species of sparrows, dove, and included even the crow and screech owl. Twelve of 15 stands had the birds for sale, some having as many as 300 or 400. Contrast that condition with the conditions today. The markets at the present time are bare of songbirds and in some states even game birds are not sold. During the present year even

the New Orleans markets were closed for songbirds, where they had been sold in large quantities ever since the days of the French occupancy. This last gain was the direct result of the effective work of the Louisiana Audubon Society.

A. O. U. COMMITTEE ON BIRD PROTECTION

At the meeting of the American Ornithologists' Union held at the American Museum of Natural History, New York, November 17-18, 1885, a report of the Committee on the Protection of Native Birds was made by Mr. Brewster, chairman, who stated that owing to ill health he was obliged to resign the chairmanship, and for this and other adverse circumstances the committee had been unable to develop a systematic plan of work. The discussion following the report showed that there was no lack of interest in the subject, and that active measures would be taken to enlighten the public and to create a proper sentiment in relation to the wholesale slaughter of birds going on for millinery purposes. "Dr. Merriam regarded the work of the committee as the most urgent now before the Union." A new committee was appointed which met at 51 Liberty Street, New York, December 12, 1885, for organization. Mr. George

(This report is to be continued in subsequent issues.)

UNITED CONSERVATION FUND, INC.

The National Audubon Society believes that you should be advised that it is not participating in the fund-raising drive under the above title, and that, to its knowledge, the following other national conservation organizations have not joined in it either: American Forestry Association, American Nature Association, Conservation Education Association, The Conservation Foundation, Izaak Walton League of America, National Wildlife Federation, and Soil Conservation Society of America.

B. Sennett was elected permanent chairman and Mr. Eugene P. Bicknell, secretary, the other members of the committee being Dr. J. A. Allen, Dr. J. B. Holder, Dr. George B. Grinnell, William Dutcher and L. S. Foster, all of New York City; Mr. Wm. Brewster, of Cambridge, Mass.; Mr. Montague Chamberlain, St. John, N. B., and Col. N. S. Goss, Topeka, Kansas. Weekly meetings were held thereafter at the American Museum of Natural History, when a large amount of preliminary work was done. A subcommittee was appointed to collect statistics respecting the extent of the trade in bird skins for millinery purposes; to another subcommittee was entrusted the duty of procuring a full series of the legislative enactments of the different states in behalf of bird protection, as a basis for intelligent action in respect to this phase of the subject.

The committee deemed it advisable that its first work should be educational in its character, in order to create sentiment against the use of birds for decorative purposes and in general for the protection of all native birds.

The year 1886 seemed to mark the high tide of bird protection work during its first cycle of development, and great activity was displayed. The A. O. U. Committee, through the cooperation of the editor and publisher of *Science* and of Mr. G. E. Gordon, President of the American Humane Association, were able to effectively reach the public. A 16-page supplement to No. 160 of *Science*, February 26, 1886, was issued; and it was subsequently republished as "Bulletin No. 1 of the A. O. U. Committee on Bird Protection" in an edition of over 100,000 copies. It contained the following articles: "The Present Wholesale Destruction of Bird-Life in the United States," by J. A. Allen; "Destruction of Bird-Life in the Vicinity of New York," by William Dutcher; "Destruction of the Eggs of Birds for Food," by George B. Sennett; "Birds and Bonnets," by Frank M. Chapman, and as editorials, "The Relation of Birds to Agriculture," "Bird-Laws," and "An Appeal to the Women of the Country in Behalf of the Birds."

In this Bulletin was presented the first completed draft of what has since been known as the A. O. U. Model Law, "An Act for the Protection of Birds and their Nests and Eggs." While the model law has been improved and strengthened as the result of experience, yet it substantially remains the same as when first drawn in January, 1886. One of the tangible gains in bird protection work is the fact that in January, 1886, the model law was not in force in a single state; today it is in full force in 28 states, the territory of Alaska and the Northwest Territories across the border.



Illustration by
Walter Ferguson.

The cougar has played an important part in the evolution of deer—it has helped develop their fleetness, alertness, grace, and cunning. That is why, say biologists, a deer is a deer and not a domestic cow.

THE FABLE BUSTERS

By Durward L. Allen*

PREDATORS are sometimes referred to as one quantity in that well-known but little understood equation, "the balance of nature." It has been a favorite sport in recent years for writers, technical and otherwise, to debunk this idea. It's all a lot of tommyrot, they say, because man has taken such liberties with the flora and fauna of this, and other, continents that no semblance is left

of the original natural balance.

The fallacy here is that even in primitive America there was no *status quo* of the kind implied. The northern hemisphere was recovering from the ice age and many changes were occurring. Vegetation types were following the glaciers northward and animal species were flowing hither and yon as they found favorable conditions developing. In many cases new local varieties of animals appeared that were specialized to fit a given set of conditions, and other varieties and species became extinct when they could not adapt themselves to change. There was plenty of flux in what the pil-

grims found, although it was taking place over time periods that could not be observed easily during one human life.

Another line of attack on the balance of nature is that there never has been such a thing—because look at the constant ups and downs of both herbivores and carnivores. They vary from periods of great abundance to near-disappearance. Now one species is prosperous and now another—where, oh where, is the balance of nature?

Probably the answer to all of this is that you can define any idea in such a way that it is discredited. In nature nothing is so constant as

*Dr. Allen, a well-known writer in the conservation field, was formerly chief of wildlife research for the Fish and Wildlife Service, and is now Associate Professor of Wildlife Management at Purdue University. This is an excerpt from the chapter, "Vertebrates," in the book, "Our Wildlife Legacy," Copyright 1954 by Durward L. Allen. This material is published by permission of the author and of the publishers, Funk and Wagnalls.

change, but practically everywhere there is a system of checks that prevents individual species from becoming abundant beyond certain limits and also prevents them from declining to extinction. A community of plants and animals is a system that contains both constructive and destructive forces. But since one species does not gain permanent advantage and destroy the system, then certainly a balance exists.

Anyone who has studied wildlife populations in various habitats will have observed that practically everywhere animals live in communities complete with herbivore and carnivore components. This is true even in our most artificialized environments. In fact, it can be questioned seriously whether an animal community can exist for long in anything but a condition of relative balance. If this occurred, there would be a rapid and catastrophic wiping out of something and then the infiltration of new species which would come to a tolerable adjustment with one another. This is automatic, since the ones that don't fit the new pattern just don't last.

Most of our farming country in the East is representative of an environment that differs radically from the primitive condition. Many of the animals it supports were not present in the original forest. Yet an appraisal of the species association as it is today shows a balance quite as complete as any that existed half a millennium ago.

Within animal communities there is a *fluctuating balance* like the teetering of a pair of scales. It is constantly being reestablished among new species as conditions are changed. It involves such dynamic and competitive elements as vegetation, herbivores, carnivores, and diseases and parasites, and it exists within limitations imposed by climatic extremes. It adapts flexibly to artificial conditions such as land-use practices and the cropping of certain species for game and fur.

The balance of nature is a useful and realistic idea, *as long as we*

apply it to what actually exists. There would seem to be little point in giving it an impossible Mother-Goose connotation and then tossing it out as useless.

A surprisingly precise balance of predator and prey fish populations was brought out in a study of five Florida lakes. For lakes with comparable conditions the poundage per acre of largemouth bass was found to be a constant proportion of the total weight of the fish. The "supporting" populations varied in species composition from lake to lake, but their weight relationship to the bass was the same. It was notable that in lakes where garfish occurred, the bass were correspondingly reduced.

In these fish associations it took about three pounds of "forage" fish to support one pound of predator. If it were possible to measure populations of land animals over large areas, it is likely that some such average relationships would be found, but the constant change that is characteristic of terrestrial habitats makes it well-nigh impossible to reduce the equation to simple terms.

Adaptations among species naturally associated are such that there is little danger of a predator actually exterminating its prey. If this were to occur anywhere, it might be expected in the case of the bobcat and snowshoe hare in the far north. On the upswing of their cycle, the hares become vastly abundant for a period and the bobcat, with easy living, builds up its numbers to a corresponding peak. Then the hares suddenly die off to a point of rarity. For a time, with their food mainstay gone, there are hungry cats to spare scouring the land desperately for food. Even under these conditions, enough hares survive to build up to abundance again within a few years.

With regard to this same subject, a Canadian biologist made some pertinent observations on the effect of wolves on Ontario deer:

"Some hunters are afraid that the wolves are gradually exterminating

the deer and are telling alarming stories about wolves killing large numbers of deer. It is true that wolves kill deer regularly and that in the spring, when the snow is crusty, they can often kill as many deer as they want to. However, instead of becoming exterminated, deer have greatly extended their range in northern Ontario in the last half-century and are in most places more numerous than they used to be 30 years ago. . . . Apparently the deer population of northern Ontario can stand as well a certain amount of hunting by wolves, maintain itself, and even steadily extend its range into the wolf country northward."

It begins to look as though we have nourished a misplaced and in some cases lethal sympathy for our fed-upon wildlife. As individuals they don't stand a chance anyway, and racially it's their enemies that keep them in business. This was strongly suggested in Murie's studies of the Dall sheep and wolf. For the mule deer and mountain lion, Thompson speculated as follows:

"Deer and cougar lived together for countless thousands of years before white man came along to protect the helpless deer. The part the cougar played in developing the deer into an animal with its particular type of fleetness, grace, alertness, and cunning—the very characteristics which make the deer a deer and not a cow and hence desirable for recreation and game—we can only conjecture. We do know this, however, that in areas where deer have had the predatory menace entirely removed, they have largely lost both the game and the aesthetic values."

Although it is difficult to prove this relationship, there can hardly be any doubt that it exists—not only among birds and mammals but in practically all living things. Karl F. Lagler applies the idea to another creature of primary interest to sportsmen: "One might go so far as to say that the gaminess of such a fish as the smallmouth bass is due to the survival of those best fitted to escape their enemies during many centuries."

THE GREATER YELLOW LEGS

Continued from Page 155

sandpiper. Its plumage, gray and brown above but mainly white below, with very conspicuous white tail coverts, long yellow-legs, and a bill over two inches long, identify it at once.

Migrating coastwise in spring and fall, greater yellow-legs are more partial to drowned flats and tidal basins than to the outside beaches. I recall a circular pool not far from Great South Bay, Long Island, to which a shorebird enthusiast used to take me. Although brackish, this basin was unaffected by ordinary tides and always harbored a goodly school of minnows. There was no cover near the water excepting marsh grass, and so we always gathered big mounds of sea-lavender ("tumble-weed") to screen us. The last time we visited the place it was balmy for the season, with a soft, perfumed breeze breathing on us from the boundless meadows.

My companion had expected a big flight of birds, but it failed to materialize, presumably because it was slack tide and they were busy feeding elsewhere. Both of us presently fell asleep. We were roused by loud, clear whistling very near at hand. About a dozen greater yellow-legs were drifting in and alighted so close that we could watch their every movement. One or two were bobbing and teetering like tip-up snipe, but the rest promptly started to feed in the shallows where they stood almost bellydeep.

From a similar hideout on a creek near Provincetown, Massachusetts, I once watched half a dozen yellow-legs catching minnows. I lay so close to them that it was easy to study their methods. They would form a front and chase a school into some triangular nook where it was easy to dash in and seize a full meal. During migrations the stomachs of these birds are sometimes crammed with fish about an inch in length. They also eat insects, snails, worms, and crustaceans.

On the ocean beaches, the few greater yellow-legs that we see, fly upwind, as a rule. Were it not for this it might be easy to mistake one for something torn loose by the breeze as it comes twisting past the decoys with cheery whistle. Its long bill in front and legs trailing behind add to its apparent size. The snipe

alights about a hundred paces away, runs up the slope to the weed belt, and glances suspiciously about for a moment. Then seeing me wave a hand, it leaps into the air, and startles by its outcry all the birds in the vicinity. The yellow-legs has certainly earned another of its familiar names—"tattler."

Greater yellow-legs are even noisier in defense of their nests and eggs. They fly round and round an intruder, whistling and scolding with incredible boldness, and stirring up their friends and neighbors to join in the outcry. They do not breed so far north as most of their order, but nest well within the timbered zone from Alaska to southern British Columbia east to Labrador and Newfoundland. They prefer sheltered nooks at the forest's edge

whereas most snipe and sandpipers have homes far out on the tundra and muskeg. They deposit their large, spotty eggs from the middle of May to the last week in June, but do not start south until the last week in July, when a few appear in New England.

From April to June they are fairly common along the Atlantic coast, particularly in salt meadows from the Carolinas to Cape Cod and points farther north. They seem equally numerous on their southern trek from late July until Thanksgiving, except when the prevailing winds favor their migrating well out on the ocean, when we note fewer than usual in our marshes and creeks.

In winter they are scattered from

Continued on Page 192

Can you identify these Mammals

By Osmond P. Breland

SEE how many of the mammals listed below you can identify from the brief descriptions.

1. This little animal is a native of Chile, Peru, and Bolivia. Wild individuals are now relatively rare, but they are raised commercially in the United States.

2. This big carnivore occurs in both North and South America. It is thought to have a wider distribution than any other land mammal in the world. The species probably has more common names than any other mammal.

3. This mammal is a native of South America, and is used as a beast of burden in the Andes Mountains. It has the habit of spitting upon people who persecute it.

4. Over long distances this four-footed animal is the fastest running animal in the world. It has been timed at a running speed of 70 miles an hour. It is a native of parts of Africa and Asia.

5. This tropical mammal almost invariably has identical quadruplets. It has recently extended its range from South America north into Florida, Texas, and Oklahoma.

Parts of its anatomy are sold, in different forms, to tourists.

6. This creature is a type of antelope, but unlike most antelopes it is quite clumsy in appearance. It has been described as resembling a horse with horns; its name is much used in crossword puzzles; it lives in parts of Africa.

7. This small rodent is best known for its migrations in large numbers. The most famous of these "suicidal" migrations have occurred on the Scandinavian peninsula.

8. Aside from the bison, this hooved mammal is the biggest and heaviest wild animal in North America. The largest species occurs in Alaska. The males produce antlers that weigh more than those of any other animal in the world.

9. This is a rodent, the fur of which is in demand for fur coats. The fur is sometimes called "Hudson Seal." The creatures occur about ponds and streams, and are widely distributed in North America. Their tails are scaly and are flattened.

10. This mammal is the closest living relative of the giraffes. The creature, although of rather large size, was entirely unknown to science until after 1900. It is a native of parts of Africa.

ANSWERS TO QUESTIONS WILL BE FOUND ON PAGE 192

★ ★ ★ NATURE IN THE NEWS ★ ★ ★

Reprinted from THE NEW YORK TIMES,
June 7, 1955

A.F.L. Union Gives \$75,000 to Buy Primeval Tract as Memorial to Hutcheson

Special to The New York Times.

NEW BRUNSWICK, N. J., June 6—One of the last primeval forests in the East is to be saved from the forester's axe.

The forest, known as Mettler's Woods, is seven miles west of here and less than fifty miles from Times Square. Ninety per cent of it is white oak, ranging from the tiniest of seedlings to ninety-foot giants that are estimated to be 300 to 400 years old.

On Oct. 15, however, the forest's name will change. It will be dedicated "The William L. Hutcheson Forest Ecological Project," a memorial to the late president of the United Brotherhood of Carpenters and Joiners of America.

It was the A.F.L. union that made possible the preservation of the forest by contributing \$75,000—the cost of buying the woods—to the Citizens Committee for Mettler's Woods. The committee was formed in May, 1953, and has raised \$57,500 more to be used as an endowment to maintain the property in its undisturbed state.

William L. Hutcheson died in 1953, and the union now is headed by his son, Maurice Hutcheson. He said in explaining the gift, that the executive board of the union had directed the officers to establish a suitable memorial to his father.

No more suitable memorial could be found, he declared, than the preservation of one of the finest stands in the country of the raw material of the carpenters' craft.

The woodland is now owned by Thomas H. Mettler, chairman of the Interwoven Stocking Company of New Brunswick. He has refused two offers of more than \$75,000 for the sixty-five-acre primeval forest and seventy-one acres of adjacent woodland.

Dr. William H. Cole, director of the Rutgers University Research Council and secretary of the Committee for Mettler's Woods, said the committee would disband after the dedication.

As soon as the property has been purchased from Mr. Mettler, he explained, it would be turned over to Rutgers University with the proviso that the tract be maintained permanently in an undisturbed state.

(Editors' Note: For an account of Mettler's Woods, and the campaign to save it, see *Audubon Magazine*, pp. 154-157, July-August, 1954 issue.)

Photographs provided by courtesy of Rutgers University.

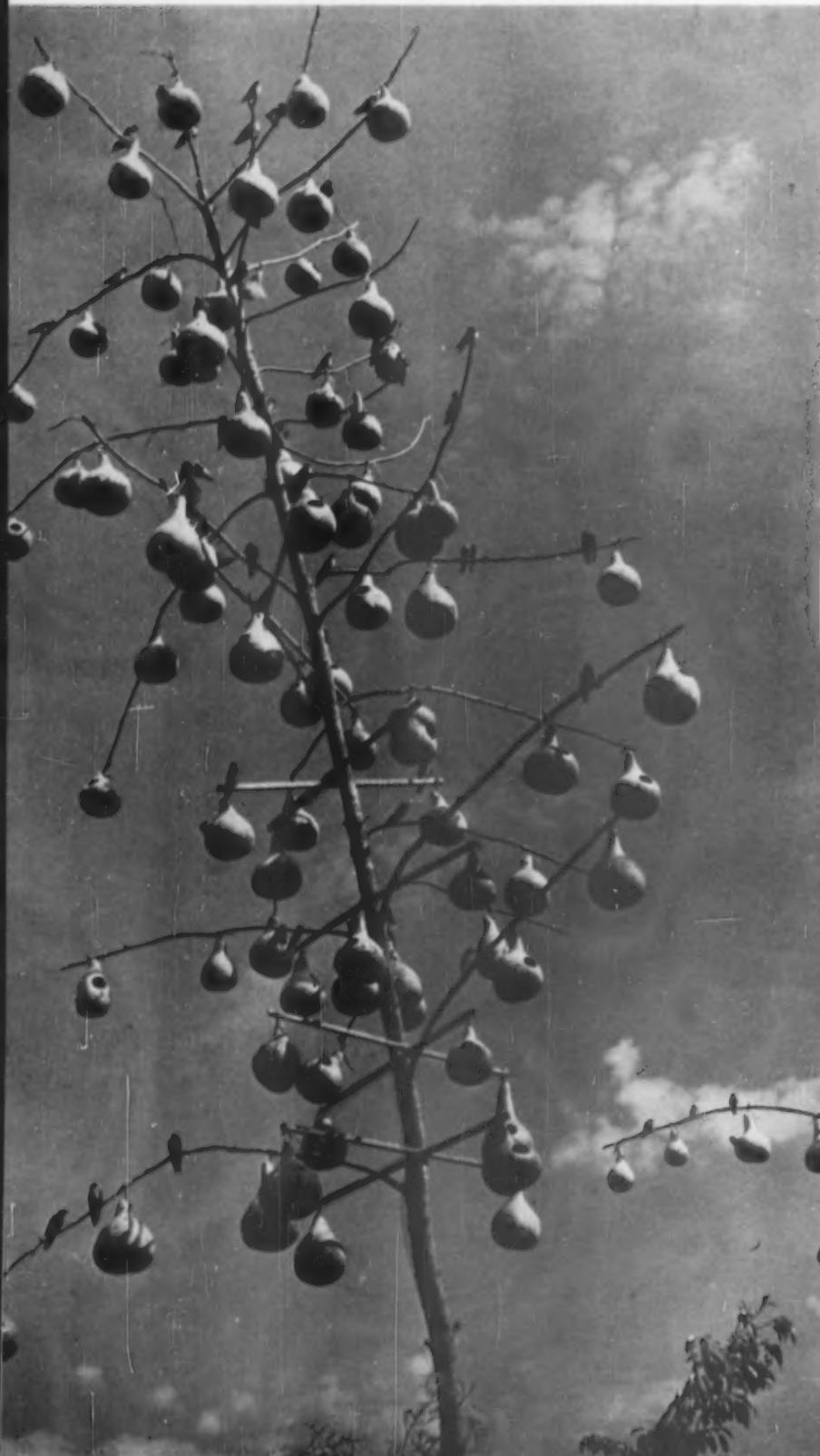
Looking up the trunk of one of the big oaks in Mettler's Woods. The tract is near the village of East Millstone, Somerset County, New Jersey.



A Starling-Martin Problem

Photographs by the author unless otherwise noted.

There are more than 130 gourds on these two poles, not all of which are shown in the picture.



By R. A. Romanes

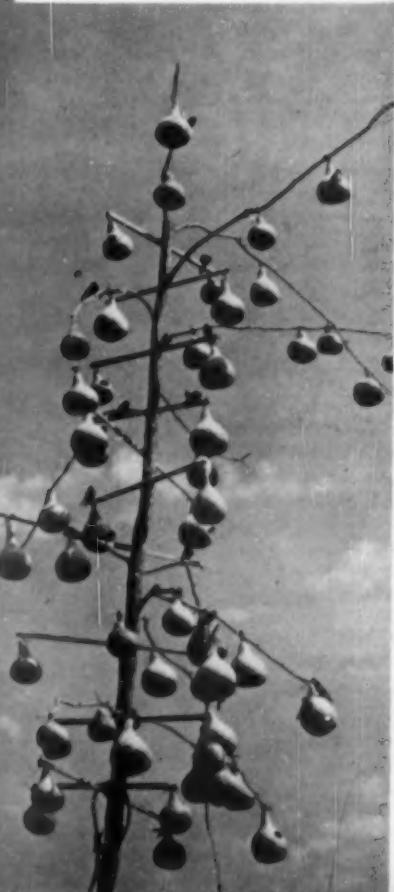
IN THE spring of 1954, I encountered a rather perplexing problem when a pair of starlings insisted on occupying some of the 12 martin boxes which I attached this year to my martin pole along with some 30 odd gourds. My object was to try to ascertain if purple martins might show a marked preference for particular nest types.

But as the starling problem created with me a wholly unforeseen situation, and since I had no way of knowing if the starlings and martins would tolerate each other for very long, I took all 12 boxes down again as the only sure way, or so I thought, of ridding myself of the starlings and, which in the end, proved to be the case.

From this incident I concluded that it possibly could mean that gourds as martin nests, which here in Georgia and adjacent states serve purple martins for nest abodes almost entirely, are less likely to be "requisitioned" by starlings for their own use.

Lacking further confirmation, I can meanwhile only suppose that the swinging motion of the gourds when hanging on the crosspieces or branches on a martin pole is the reason for this theory.

As for sparrows, I realize, of course,





Purple martins in the eastern United States depend for their homes almost entirely on man-made nest-boxes. Photograph by Allan D. Cruickshank.

they will live side by side with martins, whatever type of nest is used, but the martins don't seem to mind this if there are ample nest facilities.

Since purple martins seem to be dependent almost entirely on man's help for nesting sites, it may become important to give this matter much thought in those areas where starlings are numerous. For this reason I would like to hear from others concerning their observations on this matter.

Two particularly successful methods for excluding starlings and house sparrows from martin colonies are (a) to delay putting up the martin house and supporting pole until the date your

martins are due to arrive, or, (b) if the martin house is left in place all year, keep the holes to the martin houses closed off with a strip of wood from the time the martins leave in late summer until the day that they arrive the following spring. Always clean out each nesting apartment after the martins have left, before "closing up the house for the winter."

EDITORS' COMMENT

We think Mr. Romanes has hit upon the truth when he says that the swinging of the gourds discourages starlings from attempting to nest in them. There are a number of hole-nesting species

that are apparently afraid of a swinging nest box. Let us hope that the starlings never overcome this fear, for the sake of the gourd-nesting colonies in Georgia and other states in the Southeast where they are much used. We hope some of our readers will send us their comments or experiences that may help Mr. Romanes and others in this problem.

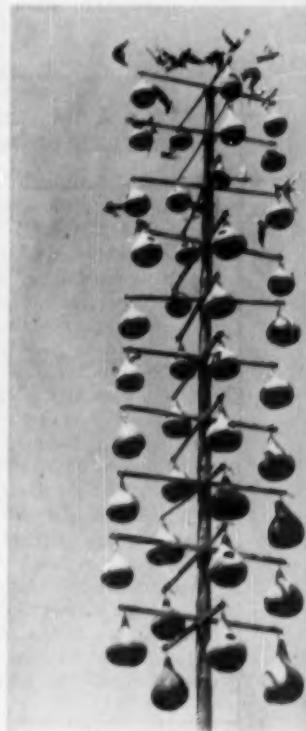
Readers may wish to refer to the helpful article, "Gourd Birdhouses," by Frances Houldson, which appeared in *Audubon Magazine*, May-June 1952 issue, pp. 194-197; also Farmers' Bulletin 1849, "Useful and Ornamental Gourds," obtainable from the Superintendent of Documents, Washington 25, D. C.



↑
A purple martin colony has occupied this nest box on the main street of Portland, Pennsylvania for more than 50 years. Photograph by John K. Terres.

← In Georgia, purple martins nest both in gourds and in nest-boxes.

→ The "bottle" gourd, because of its appropriate size and shape, is most used to attract purple martins.





The American egret, called "long white" by the plume hunters of the last century, was never as numerous as its smaller relative, the snowy egret. By the early 1900's, men had brought it close to extinction.

All photographs by Allan D. Cruickshank

SEQUEL TO THE BRADLEY TRAGEDY

As most National Audubon Society members know, the deaths of wardens Bradley and McLeod did not end the action of the Society in supplying warden service to protect large concentrations of birds on their nesting grounds. For many years wardens of our Society patrolled much of the area that is now the Everglades National Park. The present warden service of the Society is maintained by annual contributions of members and other friends to the Sanctuary Fund. Were Guy Bradley alive, he probably would be deeply gratified at the present network of Audubon sanctuaries, and to know that naturalists now take people on Audubon Wildlife Tours into the Everglades where he gave his life for conservation.—The Editors

By Charles M. Brookfield*

ACROSS the calm waters of Florida Bay a series of distant shots cracked faintly in the still summer air. It was the eighth of July; the year 1905. Young Guy Bradley, Audubon Warden of Monroe County, reached for his .32 caliber revolver, gave his wife, Fronie, a hasty kiss, the two small sons a pat on the head, jumped into his boat, and took off toward the sound of shooting. Near Oyster Keys he could see a schooner anchored. Bradley recognized the boat—Walter Smith's. This was to be a dangerous business—the arrest

of a tricky violator who had already threatened to kill him.

As Bradley drew closer, a man aboard the schooner fired a shot in the air. The warning was heeded by the rookery raiders ashore—two men came off in a skiff, one carrying dead birds. But they were too late. Before the schooner could get underway, Bradley's boat was alongside.

"I want that boy—the one with the birds," called Bradley. "He's under arrest."

"You ain't got no warrant. I'll be damned if you'll get him," answered the man with the rifle who stood on the schooner's deck above Bradley.

Two shots rang out. The little .32 ball lodged in the schooner's mast but the heavy Winchester rifle bullet entered the left side of Brad-

THE GUY

The slaughter of egrets for their
died in their defense, the battle

*Tropical Florida Representative, National Audubon Society, 13 McAllister Arcade, Miami 32, Florida.



In 1902, one of the last rookeries of the American egret to remain was on Bird Key in Boca Ceiga Bay, Florida. It was one of the few rookeries to escape the terrible ravages of the plume hunters.

B R A D L E Y S T O R Y

plumes began in America about 1840. When a man was not over, but a new day for the egrets had come.

ley's neck, ranging downward through his body. The little boat bearing a crumpled body slowly drifted with the gentle southeast breeze. A thin red stream trickled through the floor-boards and mixed with the bilge-water below. The schooner sailed away.

The chain of events leading up to this tragedy began years before, shortly after the Chicago fire, when Edwin Ruthven Bradley brought his wife, Lydia, and two sons to Florida.

Arriving in the state about 1870, the Bradleys were Florida pioneers. The eldest boy, Louis, was four, and little Guy still a baby. The Bradleys settled in the pine woods near Orlando, cleared the land and started a citrus grove, but Edwin who had been a post office employee in Chi-

cago, had a hankering to be near salt water. They moved to Melbourne, Florida, then to Lantana. Old grandfather E. C. F. Bradley, a civil engineer who had laid out many of Chicago's streets, came south to avoid cold winters and to visit the family in Lantana.

Although Edwin's two boys, Louis and Guy, spent most of their time hunting and fishing and had little formal education, their father became for a time Dade County Superintendent of Schools. This position, in that day, could not have been too arduous, for though the county stretched along the coast from the St. Lucie River to Florida Bay, the population in 1880 was but 257 persons. No doubt Guy Bradley picked up some knowledge of surveying

from his grandfather. Their mother taught both boys to play and read music. Louis played the "big fiddle" and Guy the "little fiddle." With others, they formed a string band that played for dances and parties at the big hotel in Palm Beach. Each young man received five dollars to play all night. Guy Bradley became quite a musician.

Development of Florida's east coast was well under way in the early 1890s when Edwin Bradley became assistant superintendent of the Florida Coast Line Canal and Transportation Company, then engaged in dredging the East Coast Canal. He met J. E. Ingraham and became agent for the Florida East Coast Land Company, later the Model Land Company. The Bradleys, lured

by free land, moved again from church and school to the remote Cape Sable country. Edwin and the boys each "took up" one quarter mile of waterfront, as all the settlers had agreed, extending as far back from the shore as they cared to go. Settlers grew potatoes, tomatoes, and eggplants without fertilizer in the rich hammock land, and raised numbers of chickens. Produce was carried by sailboat to Key West and sold. Those who were less industrious lived by fishing and hunting egrets for their plumes.

By 1900 the settlement at Flamingo could boast a post office and a schoolhouse with one teacher. Edwin Bradley was postmaster and his son Louis sailed the mailboat to Key West. W. R. Burton opened a general store, the only one in Flamingo, and married Edwin Bradley's daughter, Margaret. Their descendants live in Miami today. One day a strange west coast schooner put in at Flamingo with two brothers named Vickers and their sister, Fronie, aboard. Guy Bradley fell in love with Fronie. They married and

within a few years two sons, Ellis and Morrel, arrived to add to their happiness.

Commercialization and "living off the country" always takes toll of wildlife. It was not surprising that by 1900 our beautiful plume birds—American and snowy egrets—were almost extinct in Florida. The rate of slaughter was tremendous. In the nesting season of 1892 just one of the many "feather merchants" in Jacksonville shipped 130,000 bird "scalps" (skins with the feathers on) to New York for the millinery trade! The big profits from the sale of egret scalps went to the milliners. Plume hunters got only \$1.25 per scalp at Brickell's store on the Miami River. Even so, if a thousand parent birds were shot at a rookery, the heartless effort was well repaid. Several thousand young birds starving to death in the nests meant little where such pay was involved. Whites and Indians raided and killed with no thought of the future. Since the parent birds have plumes only in the nesting season, killing for plumes brought death to the season's young.

Florida had no effective law to prevent the slaughter.

A small group of earnest conservationists began fighting this destruction. In May of 1901, William Dutcher, first president of the National Committee of Audubon Societies and Chairman of the Committee on Bird Protection of the American Ornithologists' Union, came to Tallahassee, secured the introduction of a model non-game bird bill and advocated its passage before the Florida State Legislature. The bill was enacted into law and is still the basis for bird protection in Florida.

In those days there was no Florida Game and Fresh Water Fish Commission. The Governor appointed one "game warden" for each county on recommendation of the county commissioners. But Monroe County included vast stretches of wilderness—mangrove and everglades—on the mainland. Key West, the only town and the county seat, was an island. One warden could not be very effective.

The National Association of Audubon Societies, as the National Au-

Far more snowy egrets than American egrets were killed by plume hunters because (1) the snowy egret was originally more numerous and more widely distributed; (2) it was less shy and more easily slaughtered; (3) its short, delicate plumes were more in demand for millinery than the larger, stiffer plumes of the American egret.



dubon Society was then called, at its own expense, employed four men to guard the remaining egret rookeries in Florida. One of these first Audubon wardens was Guy M. Bradley, and he was faithful and courageous at his job. When the ornithologist, Frank M. Chapman, returned from a trip to a rookery with Guy Bradley in 1904, the *New York Sun* quoted Chapman as follows: "That man Bradley is going to be killed sometime. He has been shot at more than once, and some day they are going to get him."

Sanford L. Cluett, vice president of Cluett, Peabody and Company, had known Guy Bradley since 1888 in Palm Beach. In 1905 Mr. Cluett visited Flamingo and talked with his friend. Years later he wrote: "I spent several days there, and Guy told me of his connection with the Audubon Society—and further told me that he was going to arrest a poacher who was a dangerous character. This matter worried him much, and he showed me his nickel-plated, I believe, .32 caliber pistol which he carried. I told him I thought it was altogether inadequate. We said goodbye on my leaving there—in fact, he came out in his rowboat with his little boy to say farewell."

Exactly what happened on that July day in 1905 will never be known. After the shooting, Walter Smith and his sons sailed to Key West. Guy's boat drifted into Sawfish Hole, near East Cape Sable. Here his body was found by the Roberts boys who were attracted to the spot by a flock of vultures wheeling in the air overhead.

Smith, in default of \$5,000 bond, was held in jail in Key West pending action of the grand jury. The National Association of Audubon Societies retained State Senator W. Hunt Harris of Key West and Col. J. T. Saunders of Miami to assist the prosecution. Two weeks later the newspapers carried headlines: *Indignant Neighbors Burn Smith's House — Flamingo People Incensed Over Killing of Guy Bradley.* With Key West dateline, the story went on: "The Negro and his wife, who were occupying Smith's house since he came here to give himself up, were ordered to move out, and as soon as they were out the torch was applied and everything that would burn was destroyed. This act shows



Compared with the American egret, the snowy egret is much smaller; shorter; has yellow or golden-colored feet, and a black bill. The much larger American egret (see pages 170-171) has black feet and a yellow bill.

that the residents of Flamingo are indignant over the killing of Guy Bradley and that it would be unwise for Smith to return there, if he is released."

And Smith was released — five months later. The prosecution failed, despite the additional legal talent, and the testimony of S. L. (Uncle Steve) Roberts. "Uncle Steve" quoted Smith as admitting that in April Bradley had arrested Smith for

shooting in the rookery, that Smith had a Winchester rifle, and had told him that if Bradley ever attempted to arrest him again, he would certainly kill the warden. The grand jury at Key West "deemed the evidence of the State insufficient to bring the accused to trial and failed to present a true bill." For Smith, this was the same as an acquittal.

But Guy Bradley did not give his life in vain. His death focused na-

tional attention on bird protection. Florida conservationists were outraged. President William Dutcher spoke for the National Association of Audubon Societies: "Every movement must have martyrs, and Guy Bradley is the first martyr to bird protection. A home is broken up, children left fatherless, their mother widowed, a faithful and devoted warden cut off in the movement. Heretofore the price has been the life of birds. Now human blood has been added." The National Association of Audubon Societies raised funds and bought a house in Key West for Guy's widow, Fronie, and the children.

The killing of Bradley, followed by the brutal murder of Audubon Warden McLeod by bird plume hunters near Charlotte Harbor, South Carolina, in 1908, caused a shift in the conservation battlefield. The Audubon Society struck at the very heart of the traffic in bird "scalps"—the millinery trade in New York. The "Audubon Plumage Bill" was introduced in the Legislature at Albany. T. Gilbert Pearson, President of the Society, successfully spearheaded the fight for passage of this bill to outlaw the commercial use of wild bird feathers in New York State. Signed by Governor Charles Evans Hughes in 1910, the bill was enacted into law.

It is a great source of satisfaction that the Cape Sable country, scene of Guy Bradley's efforts and death and home of the wild birds he died to save, is preserved forever within the boundaries of the Everglades National Park. Ill-considered drainage canals ruined the land for farming by letting spring tides flood it with salt water. Hurricanes destroyed most of the original buildings, but the village lingered on for a time as a group of fishermen's shanties on stilts.

Out on the lonely sand beach of East Cape Sable stands a gravestone inscribed:

GUY M. BRADLEY
1870-1905
Faithful Unto Death

As Game Warden of Monroe County
He Gave His Life for the Cause
to Which He was Pledged.

NATURALISTS DISCOVER HELL'S CANYON—Continued from Page 153

boat, "Wenaha," during good weather; for in Hell's Canyon there is much of interest to everybody. But to naturalists his service affords the cheapest expedition possible into a roadless wilderness. Lowell Adams, U. S. Fish and Wildlife Service biologist at Missoula, Montana, and I—a botanist of sorts—found this to be true. We have spent several years in the northern Rocky Mountains, and both of us have traveled far. We are rather blasé about primitive areas.

Farms and ranches, lying under the first rays of the rising sun, greet one's eyes on either shore of the river for two hours after starting a typical Hell's Canyon trip. But all the while the river banks are growing steeper on this prelude to Hell's Canyon. Hills become transformed into mountains. Gentle slopes gradually take on a rock-strewn, or timber, cover instead of a cultivated or grassy one. Along the way, lava palisades and stiffly erect columns of basalt give way to a jumble of flinty ridges, as we approach the canyon proper. We see many hawks from the river as they circle in the limited sky visible, which causes Lowell to whip out his binoculars and focus on them. Swainson's hawk, sharp-shinned hawk, goshawk, and sparrow hawk are quickly jotted down in his field book. "Anyone might know that's a red-tailed hawk," says Lowell pointing to a big fellow soaring

and dipping among the rocks. "He is big, rides the air currents around in circles, has wide wings and a short, broad tail."

As the boat labors on upstream, numerous wild animals appear on shore instead of the cows and sheep we saw in the beginning. We see mule deer on the more forested shores, and coyotes may scamper across the open areas near the Snake's confluence with a minor stream.

But it is the birds along the way that call for the most attention. They get it, too, especially from Lowell, with his notebook and binoculars on the Hell's Canyon boat. Kingbirds, orioles, sandpipers, killdeer, canyon wrens, and rough-winged swallows lead in his tabulation. Of course, the list was started by the omnipresent cliff swallows, which are continually on the move around the boat looking for insects close to the surface of the water.

When we have passed the mouth of the Salmon River, 50 miles south of Lewiston, Hell's Canyon begins. Now the boat is slowed more frequently by rising waters at places like Zig-Zag Rapids, Mountain Sheep Rapids, and Rolling Bar. So swift is the current in these places that the "Wenaha" travels forward only a few feet per minute, in spite of her husky diesel engines. Our slow pace here gives passengers the impression that their vessel is on a

The Future of Hell's Canyon

A year ago (July 11, 1954) a news report in the *New York Times* told of a long fight that had been going on over the future development of Hell's Canyon. The battle has been between the Idaho Power Company, a private utility, and groups favoring public, or federal, ownership of power. Said the *New York Times* dispatch: "Idaho Power is fighting for licenses to build three low dams in the Idaho-Oregon sector of the Snake River, including one in Hell's Canyon, the deepest river gorge on the continent.

"Earlier the canyon had been staked off for a gigantic federal structure some engineers considered a key . . . in Columbia River basin plans."

The *Times* article suggested that, in the future, long and involved litigation over the dam building on the Snake River is likely.

If this comes to pass, Hell's Canyon may be expected to remain as it is for some time to come. If in the near future, atomic energy should outmode big power dams, it is even possible that the dam in Hell's Canyon may never be built. If it is not, another scenic treasure in the rugged mountains of the Far West will have been spared.—The Editors

treadmill. On our four-hour return with the current the next day, "white water" races by in a flurry of spray.

The shores on either bank become even more jagged and picturesque in Hell's Canyon. Plants become sparse, therefore the occasional patches of green seem all the more colorful against a backdrop of red, orange, ochre, and sienna cliffs. The largest trees are ponderosa pines growing much taller than others on fertile riverside soils. There are also willows here, and western hackberries. Curl-leaf mountain mahogany, ordinarily a large shrub, grows 50 feet tall, and has a trunk diameter of two feet beside the river in Hell's Canyon.

Finally, at Sand Creek on the Wallowa National Forest, the end of the upriver run is reached when the "Wenaha" docks at Hell's Canyon Lodge. It is none too soon for the passengers, whose appetites have been whetted by 12 hours of sun, sights, and thrills. Everybody eats heartily of the big meal served at the lodge.

After dinner, naturalists on the trip are even busier, with the opportunity now to scout around on the ground. Lowell gets out his notes again to catch and record the evening songs of birds. Brewer's blackbird, great blue heron, lark sparrow, and meadowlark are quickly listed. Lowell beams happily and whispers, "There's a lazuli bunting over there. He's singing his evening song. That particular trill is one of the sweetest to be heard in this area." The beautiful cinnamon, white, and blue lazuli bunting came out of the shrubbery long enough for a look at him just before darkness descended.

It is possible to get an intimate look at a cliff swallow colony here at Hell's Canyon Lodge. Hundreds of birds have built homes immediately above a Forest Service trail beside the river, where a trail-way has been blasted out of the overhanging rock. In several places, birds have built as low as five feet above the trail, but a person deciding to explore Hell's Canyon should not get too prying about their mud-built nests. A bird may zip out of its doorway and collide with one's nose. I learned this from experience, but it was only one of many that makes a Hell's Canyon trip an exciting event for any one.

REPRINTS

From Audubon Magazine

Audubon Magazine articles offer new perspective for Americans. Whether you're an at-home conservationist, a well-traveled bird-watcher—or one who hasn't quite decided what niche you'd like to fill—there's an Audubon Magazine reprint for you. Here's a selection that suggests a variety of activities.

THE TRAVELER — Gaspe Vacation, by Hustace H. Poor. One of the most thrilling sights in nature is the huge gannet colony on Bonaventure Island. The author tells you all about it and also describes the fabulous animal and plant life of this naturalist's paradise.

FOR THE BIRD-WATCHER — Wings Across the Moon, by Robert J. Newman. The story of night-time bird-watching during fall migration. Here's a fascinating new activity for the individual or bird club which can add to our scientific knowledge of migration.

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Winter Problems at the Feeding Station, by John V. Dennis. Some bird-attractors do have problems with cats, squirrels, and other animals. Mr. Dennis discusses them and offers some practical solutions.

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The Key Deer: A Challenge from the Past, by Robert P. Allen. The story of one of our most appealing creatures—America's smallest deer—and the problems of its preservation.

Vanishing Wings Over the Sawgrass, by Alexander Sprunt, Jr. The author tells about the alarming plight of the beautiful Everglade kite and offers suggestions to prevent its extinction.

A Price on His Golden Head, by Olaus J. Murie. Will the breath-taking sight of a majestic golden eagle circling in the heavens be lost to future generations? The author is concerned about the lack of appreciation of this magnificent creature.

A Closer Look at the Killers, by Paul L. Errington. An authority on the food habits of predatory birds and mammals finds that these creatures maintain their integrity as wild creatures regardless of human meddling.

Death in the Florida Marshes, by Herbert R. Mills. Deadly DDT, aimed at mosquitoes, may threaten an entire salt marsh community. Here is an alarming account of wildlife destruction in the Tampa Bay area.

10¢ each

REPRINTS

Audubon Magazine, 1130 Fifth Avenue, New York 28, New York

OPERATION

BANFF, Alberta, June 2, 1955—Operation Osprey, watched by hundreds of nature lovers in this area of the Canadian Rockies, and followed by thousands of others through newspaper stories, ended today in a draw, with honor to both sides.

Canadian Pacific Railway communications forces completed the delicate operation of setting up a special crossbar atop a telegraph pole, gingerly transferring the large and somewhat untidy nest, containing three eggs, to its new perch safe above the wires.

While Linemen Perry Holbrook, of Sylvan Lake, Alberta, and Garth Barrick, of Winnipeg, erected the new crossbar and performed the delicate operation of moving the nest, Mother Osprey, anxious about the eggs, circled around the pole, dive-bombing occasionally and uttering loud and rude cries.

And while all this was going on "The Canadian," the Canadian Pacific's new streamlined, stainless steel flyer passed by, giving its passengers a brief glimpse of a tense drama climaxing three years of struggle.

For three years this osprey, described as a giant species of fish-eating hawk, persisted in building her large and unwieldy nest right among the telegraph wires. If this was hazardous to the hawk and her feathered brood there is nothing in the bird vital statistics to prove it. But it was a nuisance to the telegraph linemen. The nest interfered with the normal flow of telegraph messages over the lines and on more than one occasion was suspected of fouling up the Canadian Broadcasting Corporation's network which also moves in the west over Canadian Pacific carrier.

Linemen were diverted from their natural impulse to uproot the nest and dispossess the intruder with no further nonsense. Bird-lovers in Banff, Calgary, and surrounding settlements took up the cry with urgent protests and last year succeeded in giving the bird "a life."

But this spring when Mother Osprey, evidently under the impression



In the beginning, the osprey nest rested directly on the wires and interfered with communications. What could be done?



Perry Holbrook and Garth Barrick, company linemen, shift the nest and its eggs from the top of the pole to the wires.

that she held a long-term lease on the premises, returned to the scene of earlier obstetrical triumphs, Canadian Pacific linemen decided to take steps. The solution was a new crossbar, with a platform attached, straddling the pole above the highest span of wires. So far the obstinate

osprey seems happy with the new location (higher and sunnier, closer to schools and transportation; good view of Canadian Rockies and Bow River). Next year will tell the tale, however: will she set up housekeeping in the new place or return to the old site among the wires?

EDITORIAL COMMENT

The article printed above appeared this spring in newspapers throughout the United States and Canada. We believe that the Canadian Pacific Railway has developed a practical solution to the nesting problem for those ospreys that select communications poles on which to build their nests. Ospreys have always nested along the coastlines of the United States and Canada, and near inland lakes and rivers in order to be near the source of their food supply of fish. The clearing of forests, and especially the elimination of tall dead or dying forest trees in suburban building projects, has increasingly deprived ospreys of places to nest. Each year they have been forced to turn more and more to utility poles for nest sites as the tall dead trees have disappeared.

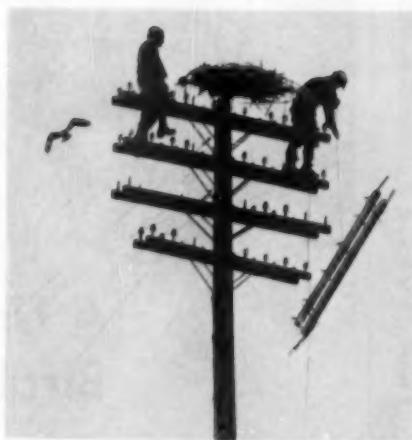
This past spring, a school boy in New Jersey wrote us an indignant letter. He said that linemen of a New Jersey utility company had pushed an osprey's nest off a pole just outside his classroom window of a school in Point Pleasant, New Jersey. Recently this young man sent us a clipping from a New Jersey newspaper in which the story of the Canadian Pacific Railway and the ospreys had appeared. We have reprinted below the concluding paragraph of his letter. We are sure that our readers will agree with his comments and his timely suggestion.

"I am enclosing an article about an osprey nest. Would this be a good idea for the Jersey Central Power and Light Company to do in our town? It would be nice for them to do this to the poles outside our class window."

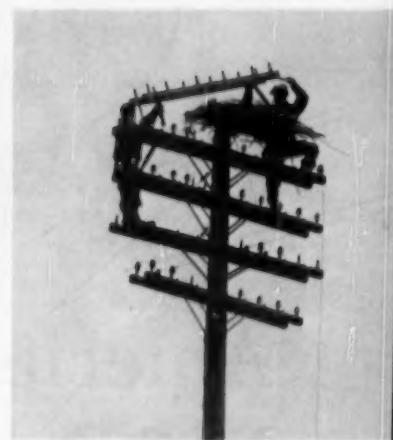
OSPREY



While they prepare to haul up an additional crosspiece to raise the nest above the wires, "The Canadian" passes by.



The men get the new crosspiece, which has been especially constructed to hold the nest. A parent osprey watches anxiously.



The new nest site for the osprey is almost in place. Will the bird return to her nest and accept it again?

All photographs courtesy of Canadian Pacific Railway.



One of the parent birds is satisfied and flies in to alight on the nest. She has accepted it and may have screamed her thanks.



George Scott, foreman, with Garth Barrick and Perry Holbrook are pleased. They have helped solve an osprey's domestic problem.

Drawings by Louis Agassiz Fuertes

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How to Attract Birds



A New Trend in Birdhouses

Part II

By John V. Dennis

HAROLD V. TERRILL, biologist of the Missouri Conservation Commission, suggests placing houses on a galvanized pipe which can be attached to a post. To provide insulation when the house is placed in the open away from shade, he recommends a false roof one inch from the top. The newly created space can then be filled with rock wool or sawdust. To prevent houses being taken over by bees or wasps, Terrill advises spraying the inside with DDT.

It should be mentioned that the wood duck is not the only bird to benefit from the many housing programs begun in its behalf. The screech owl sometimes occupies more wood duck houses than does the wood duck. Terrill reports that this was true in one of the Missouri Commission's projects consisting of 123 houses. In 1953, 26 per cent of these houses were occupied by screech owls, only 5 per cent by wood ducks. Terrill points out that this project wasn't well located. The Commission has had much better success in other sections. In northwestern Ohio, Laurel Van Camp whose interest in wood ducks is equaled only by his enthusiasm for bird-banding, sometimes bands as many as 200 young screech owls a year. Nearly all his owl nests are in wood duck boxes. Nevertheless he has good success with wood ducks, too. In 1954, 55 per cent of some 85 boxes around Genoa, Ohio were occupied by wood ducks, which isn't a bad average.*

*Audubon Field Notes, Vol. 8(5): 348, 1954. (See also, "Home-Builder for Wood Ducks," Audubon Magazine, March-April 1952, pp. 104-108.—The Editors).

In addition to screech owls a number of other birds also occupy wood duck boxes. Mr. Frank Bellrose reports that of the Illinois Natural History Survey's houses, below 1 per cent of those occupied are taken by such birds as the flicker, sparrow hawk, house wren, Carolina wren, and starling. This suggests that dimensions are not of critical importance to some species. Had the houses been in the open, undoubtedly larger numbers would have been occupied by sparrow hawks and songbirds.

Fortunately, game commissioners and others with wood duck projects are liberal about having their houses shared by birds other than wood ducks. There are always a good many houses that go begging, and it is felt that these might as well be occupied by useful birds. Predatory mammals, although valuable as furbearers and for sporting purposes, are excluded from wood duck nest boxes, if possible, only because of a desire to perpetuate the wood duck which has become dangerously low in numbers throughout most of its range.

Tree Swallow

Houses erected by early settlers for purple martins were often taken by tree swallows. Today wherever the tree swallow is found it is one of the first birds to accept artificial nesting sites. In the cranberry growing region of southeastern Massachusetts, growers have long been in the habit of encouraging tree swallows for their services in keeping down a moth which in its larval stage ruins their produce.

One of the largest colonies in Massachusetts was established for experimental purposes at the Austin Ornithological

cal Research Station on Cape Cod by Dr. Oliver L. Austin in 1930. For several years Mr. Seth H. Low closely followed the nesting activities of the swallows and carried on an extensive banding program.* To facilitate this work boxes were equipped with removable fronts and roofs. To examine the box it was not necessary to elevate it, for on the back of the box is a metal band which permits it to be slipped on or off the pole.

While not as much emphasis has been put upon scientific studies of the tree swallow in recent years, the banding work continues and boxes are kept in perfect repair. In November all the boxes are taken indoors, cleaned thoroughly, restained, and stored inside for the winter. They are put up again about the end of February.

Although tree swallows are gregarious and may nest in colonies, experience at the Austin Station indicated that houses should not be placed so close together that there would be undue competition for the flying insects which make up the tree swallow's food supply. Boxes near water or in places where insects seemed to be abundant were spaced about 25 feet apart, in wide open fields they were more widely separated—150 to 300 feet from each other.

There have been no serious problems of predation at the Austin Ornithological Station, nor of displacement of tree swallows by less desirable birds. Bluebirds and chickadees live in some of the unoccupied boxes without objection by the tree swallows. The black snake, always a potential predator, is kept from the boxes by metal guards (cuffs two feet square wrapped around the posts about one third the distance from the top). Occasionally red squirrels, wasps, field mice, and English sparrows occupy boxes and are removed. The house wren does not nest on Cape Cod and so does not compete with tree swallows for the boxes.

The one serious mishap experienced by the colony resulted from the wholesale use of DDT. Very early in the spring of 1951 the entire Cape Cod region was sprayed aerially with DDT in a campaign to eliminate the gypsy moth. The insect population, as a whole, was so reduced when the tree swallows returned that little food was available. Previously, from 75 to 80 per cent of the 250 boxes were occupied by tree swallows. That year not over 30 per cent were used. However, since 1951, with no repetition of large-scale spraying, the tree swallow population has gradually increased.

Tree swallows are plentiful in southern Canada and are often provided with

*Bird-Banding, 4: 76-87, 1933; and Bird-Banding, 5: 24-30, 1934.

nesting boxes. Mr. Frank Smith of Toronto, Ontario, with 15 tree swallow houses has an occupancy of 100 per cent. The same goes for several martin and bluebird houses. Nest robbers with Mr. Smith are chipmunks and red squirrels. These he catches in banding traps and removes to a safe distance. On the shores of Rice Lake, east of Toronto, he bands large numbers of migrating birds. He has seen flocks of 30,000 tree swallows near the lake at one time.

Another Canadian bird-bander and tree swallow enthusiast is Brother Justin-Marie of St. Bruno, 100 miles north of Quebec. His banding station is in enviable surroundings, a mountainside bird sanctuary in the vicinity of which are five lakes. His birdhouses—some 60 of them—are situated along roadsides in open country, and near pond borders, orchards, and farm buildings. Not only tree swallows, but bluebirds, crested flycatchers, and house wrens occupy his houses. Tree swallows normally occupy one-third of them.

It is surprising to hear of English sparrows, starlings, and house wrens so far north, but the St. Bruno Sanctuary has all three. The house wrens are encouraged and have their own boxes. In Montreal, where Justin-Marie used to

Continued on next Page

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live, house wrens and tree swallows were constantly fighting for possession of his nesting boxes. On one occasion he trapped a house wren, banded it, and then released it some 50 miles southeast of the city. He was convinced that he would see no more of this bird, but first thing the next morning the bird was back and in his nest-box trap again.

Tree swallows are plentiful over Douglas Lake in northern Michigan on the shores of which the University of Michigan maintains a biological station. Dr. Olin S. Pettingill, the director, reports that the station maintains 58 boxes for tree swallows, 9 for house wrens, 5 for flickers, and 4 houses with 16 compartments each for purple martins. Careful records are kept as to nesting success. This varies somewhat for the tree swallow although, as a rule, about 80 per cent of the eggs hatch and about 70 per cent of the young leave the nest. In 1946, a very good year, 95.1 per cent of the eggs hatched and 93.4 per cent of the young left the nest. In 1954, on the other hand, only 54 per cent of the eggs hatched and less than 15 per cent of the young left the nest. A sudden cold spell during the breeding season is the most common cause of nesting failure. Also prolonged wet spells, which reduce the number of flying insects, lead to mortality among both young and adults. Predation results in few losses at the Michigan Biological Station. Raccoons and flying squirrels may rob a few nests, but Dr. Pettingill says he is happy to accommodate a few flying squirrels in his houses because of their charm.

Purple Martin

Quite appropriately Alexander Sprunt, Jr., calls this the "bird-box" species of the United States. Writing in Bent's life histories,* he describes how the Indians, even before the advent of the white man, put up gourds as nesting sites for purple martins. The custom was taken up by the plantation negroes of the South. Gourds are still widely used in the South, but in most other parts of the country the colony nesting box with many compartments has become a familiar part of the landscape.

There can be little doubt but that the purple martin is the best housed of all our cavity-nesting birds. Only in the far West, and a few isolated spots in the East, do martins cling to their primitive nesting sites in hollow trees. With the coming of the starling and English sparrow, fear was expressed that the aggressive tactics of these newcomers would deprive the martins of their nesting colonies. Some martins did give up

their apartment-like houses, or were forced to share them with others, but Rev. Garrett S. Detwiler of Salem, New Jersey, thinks that the purple martin is in no great danger of being displaced.* "They are second to none," he writes, "when it comes to dislodging starlings from the colony houses. The martins go about their task in a systematic and ruthless manner, the like of which is never used by the starlings. They will gang up on the unsuspecting starlings and actually 'dive-bomb' them into the earth if their right to the colony house is disputed."

Although martins will nest in a wide variety of structures, several important requirements should be taken into consideration. Martins, as Mr. Charles L. Smith points out, are skillful aerialists

which need plenty of room for landings and take-offs. Mr. Smith* recommends placing houses 16 to 20 feet above the ground and well away from trees or tall shrubbery. Mr. Elmer Rix of Lexington, Kentucky, who has been attracting martins for 25 years, places his houses 15 feet from the ground and at least 15 feet from any tree or building. As part of his management policy he takes down his house after the nesting season. Before they are replaced they are cleaned, repainted (white with green trim), and a DDT spray applied to the interior.

Many martin enthusiasts do not put their houses up in spring until the actual date when the martins arrive or a few days earlier. This practice is followed so that English sparrows or star-

**Ebba News*, Vol. 17 (3): 2-5, 1954.

***How to Attract Birds*, *Audubon Magazine*, 56 (2): 80-82, 1954.

A FIVE-DOLLAR BILL IN A BIRD'S NEST



A brown thrasher's nest with a \$5 bill woven into it is shown by Charles F. Collison, Greenwich Village writer. It was found by Enoch Peterson, Minnesota farmer, who presented it to Mr. Collison, formerly farm editor of the *Minneapolis Tribune*.

*Bulletin 179, United States National Museum: 489-509, 1942.

lings will not have an opportunity to become established before the martins arrive. The same end may be accomplished by covering houses which are left up all winter with a tarpaulin or by stopping up the entrance holes.

As mentioned, gourd houses are still very popular in the South. They are less expensive than the apartment style houses and seem to be preferred by the martins. Mr. J. T. Mullis of Nicholls, Georgia, has eight colonies, each consisting of six gourd houses. The gourd homes, suspended from the cross-arms of posts about 20 feet high, may be seen by anyone driving along Route 1 near Alma, Georgia. Mr. Mullis always has a large supply of gourds on hand. He says the martins do much better in the large gourds. His gourds average about 9 inches across and 10 to 11 inches in depth. The unpainted gourds last about 5 years while, if painted, they last as long as 10 years. Mr. Mullis makes a round entrance hole, 2 inches in diameter, just above the widest portion of the gourd. Small holes are placed in the bottom for drainage.

As for English sparrows, Mr. Mullis says the martins drive them away. His colony seems to thrive every year. In 1954 Mr. Mullis estimates that 200 young left his houses. As for utility, Mr. Mullis says the martins keep down many insects including a serious pest of the tobacco crop. But the main reason for his colonies is that he just likes to have the birds around.

Motorists driving through parts of the South, particularly in eastern Tennessee and northern Georgia and Alabama, cannot fail to be impressed by the large numbers of red martin houses to be seen along the way. Each house, two stories high and with sloping roof, contains eight compartments. On the roof is an advertisement pertaining to a scenic wonder. But the most surprising feature is that none of these houses contain martins. Many are occupied by starlings and some by bluebirds. Upon inquiry I learned that within two years, an astonishing total of 3,000 houses had been placed. Apparently the martins have shied away because of the bright red exteriors. It will be interesting to

see if they eventually overcome their reluctance to use the red boxes.

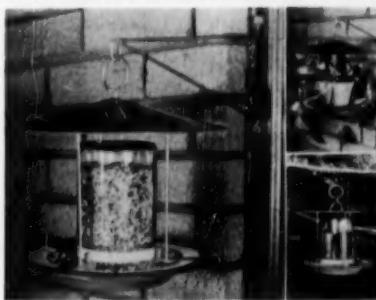
New Management Techniques

So closely is the term "wildlife management" associated with game species that few people consider the fact that techniques similar to those used by game managers have long been used successfully in encouraging songbirds and other non-game species. No better illustration of this can be found than in some of the latest practices concerned with making birdhouses more habitable and safer for their occupants.

One of the practices to which everyone subscribes is that of removing the old nests and giving the houses a cleaning before they are re-used. With the appearance of DDT, Terrill, Rix, Muselman, and many others have used this insecticide inside bird boxes to control the various mites, lice, and other small pests which make life uncomfortable for birds and occasionally cause mortality. There has been a difference of opinion as to when to clean houses and whether or not to leave them up all winter. John K. Terres in his recent book* gives good reasons for leaving nesting material in the box through the winter. This is to encourage a useful insect

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tists to the contrary notwithstanding!*

"The writer tried almost everything he could think of, including galvanized iron pipe to support the nest boxes without success, for both snakes and squirrels can climb it as it gets rusty or rough, and pipe is not especially slippery in any case unless kept greased.

"Finally he hit on the idea of using smooth bamboo poles to support everything from wren to wood duck houses, and so far has suffered no further losses from snakes or climbing mammals. As bamboo even roughens a bit when exposed to the weather, a four- or five-foot section of each pole is rubbed with sandpaper or emery cloth just before nesting starts. This restores or even increases natural slipperiness. If this is done he defies any snake or mammal to climb the pole! True, with accurate enough aim flying squirrels may end up a glide by landing on the house itself. Should this happen young birds may be lost, for these charming little mammals will even kill and consume adult birds larger than themselves if they can corner them in a hollow, as the writer has determined by experiment. It may be significant, however, that we do not as yet have any record of flying squirrels 'taking up' in our bamboo supported birdhouses, as is frequently the case with similar ones attached to tree trunks.

"Fortunately for us, bamboo grows in our dooryard in all sizes from one to five inches in diameter, and up to 40

*Editors' Note: Herpetologists do not claim that snakes can not hear. Laboratory tests have suggested that snakes do not appear to "hear" in the same way that human beings do—through sound waves that convey sound through the ear drum. The "hearing" of snakes is thought to be tactile—that is, through tremors, or vibrations, which are conveyed to the snake through the ground or other solid object it may be lying upon or clinging to.

Mr. and Mrs. W. G. Duncan (below) with bluebird nesting box. Photograph by John K. Terres.



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feet in height. We cut a section of bamboo of the proper size and bury it in the ground with the top flush with the surface. This should be of a size that permits the butt of the bamboo pole to slip into this buried socket easily. Hence this pole can be lifted out and lowered in a jiffy. For convenience in cleaning, disinfecting and so forth, the box can as readily be slipped off the end of the pole. Prepare a round piece of soft pine wood that will just slip into the top of the bamboo full joint length, and to this firmly screw a small piece of half-inch soft pine board. This board may then be screwed to the wood bottom of the birdhouse, permitting the box to be lifted off of the top of the pole for any desired purpose. The whole assembly is as convenient as a 'pocket in a shirt,' and in use lasts for several years. Our cypress knee birdhouses will last a lifetime, for truly 'heart' cypress is the wood eternal.

"Since we have been using the described set-up, full broods of lusty young birds of hole-nesting species leaving the nest boxes are the rule, not the exception as before."

Better management policies such as those suggested by Mr. Terres and Mr. Stoddard are making it possible to provide ever healthier and safer nesting facilities. This should make it possible to have fewer nesting houses with just as big returns. But most birdhouse experts will not be satisfied unless they can keep adding to their projects each year. They agree with Mr. W. G. Duncan of Louisville, Kentucky, that there is no greater sin than that of not providing enough houses for the birds that need them.

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BOOK



Notes

By Monica de la Salle
Librarian, Audubon House

BIG DAM FOOLISHNESS: THE PROBLEM OF MODERN FLOOD CONTROL AND WATER STORAGE

By Elmer T. Peterson, *The Devin-Adair Company, New York, 1954. 8 1/4 x 5 1/4 in., 224 pp. \$3.50.*

Drought, floods, and the conservation of energy are major economic problems of today. While everybody agrees that water supply and flood control are essential, two schools of thought are engaged in bitter controversy as to the means of achieving the best results. Conservationists insist that water should be stored where it falls, i.e., in the soil, where, experience has shown, long periods without rain can be weathered without damage to crops and runoff kept to a minimum, thus avoiding flood disasters. Furthermore, water stored in the soil is clear and pure, the landscape remains unchanged, and erosion is avoided. The Army Engineers, on the other hand, promote huge dams having multiple purposes: storage for dry periods, stop-gaps for excessive rainfall, and the means for producing energy. The troubles connected with these projects, according to Mr. Peterson, are equally multiple. While hundreds of millions of dollars are drained from the taxpayer—thus promoting inflation—to construct and maintain them, not only does the cost of power go up, but rich farmlands are flooded, wilderness areas ravaged, and our whole national park system threatened. Dammed river waters, as all who have ever looked at them well know, are muddy. These huge reservoirs become silted so rapidly that they start "deserts on the march" upstream, while the rich topsoil is carried downstream to the ocean.

One might be inclined to wonder whether the author is not so ardent a conservationist that he could not regard the monumental constructions of the Army Engineers with an impartial eye. But it is well to bear in mind that dams and irrigation canals are not new inventions. Several thousand years

ago, the Chinese and the Babylonians undertook similar projects, which came to grief as uncontrolled silt engulfed towns and farmlands; of these sites nothing now remains but sand. "Big Dam Foolishness" is a book every responsible citizen should read.

ATTRACTING BIRDS TO YOUR BACK-YARD

By William J. Beecher, *All-Pets Books, Inc., Fond du Lac, Wisconsin, 1955. 5 1/2 x 5 1/4 in., 63 pp. Illustrated. Paper, \$1.00.*

Written by a former president of the Chicago Ornithological Society who is now on the staff of the Chicago Natural History Museum, this small book is intended mainly for dwellers in the city and the suburbs. Attention is given to backyard "improvement" (i.e., planting), birdhouses, feeders, and baths, along with concise information on the species most likely to be seen in or near towns.

LAST OF THE CURLEWS

By Fred Bodsworth, *illustrated by T. M. Shortt, Dodd, Mead & Company, New York, 1955. 9 1/4 x 6 1/4 in., 128 pp. \$3.00.*

This unusual little volume happily combines facts and fiction. Each chapter

AN APPEAL TO AUTHORS AND PUBLISHERS

More than one reader of our "Book Notes" has complained that the index of a particular book recommended in these columns has presented an annoying stumbling-block—either because the index was too sketchy, or too complicated to be usable. This is reason enough to decide not to buy a volume, for if one wants to read a book it can be found in the library, whereas if it is to be kept for future reference one wishes to be able to consult it easily, and not to search for a particular passage which cannot be unearthed except by a time-consuming re-reading of the book. Thus we venture to suggest a few considerations which would add greatly to the value of many a fine book.

First, why not a *single* index to a book, one which includes authors, subjects, and scientific names, if any, in a single alphabetical sequence? Nothing is more exasperating than to look up the name of an author and to realize, just as one is about to conclude that he is not in the index at all, that one is looking in the index of *subjects* and that the authors are listed elsewhere. Second, if a short index is better than none at all, a detailed index is infinitely more useful than that all too common sort with its strings of page numbers following some very general entry. Sub-headings, under main index items, given alphabetically, and not simply in the order of their occurrence in the text, would bring a sigh of relief to many a frustrated user. The more information brought out by judiciously chosen subject headings (not by proper names or mere catch words alone), the happier and wiser a lot of book-users are going to be. Cross references (*see* and *see also*) will likewise help enormously. And may we add that while it is mainly scholarly and scientific works that we have in mind, many books of personal reminiscence or so-called "inspirational reading" would have added value if indexed, since they frequently contain material not to be found elsewhere.

We are aware that expense, time, and the skills required make a proper sort of index a good deal easier to ask for than to execute. However, since authors may spend years getting a book just right, and publishers may take great pains to make it handsome as well as legible, possibly both author and publisher could give more thought to those humble but nevertheless vital keys to stored-up knowledge which only a good index can provide.



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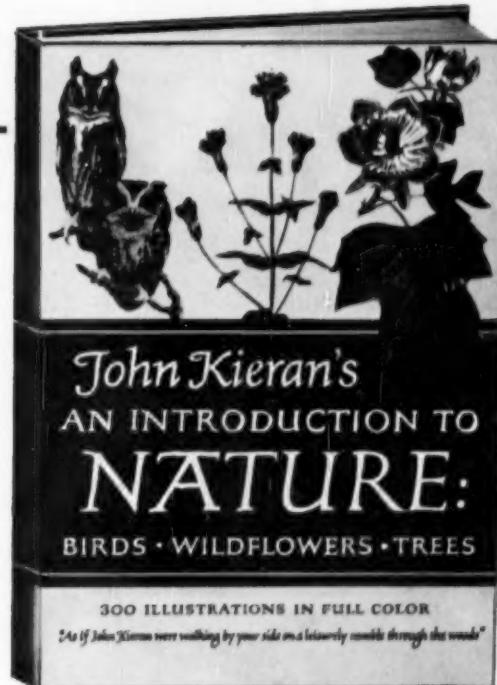
John Kieran's deservedly famous nature volumes—*An Introduction to BIRDS*, *WILD FLOWERS* and *TREES*—have already been highly praised in their separate editions by critics, scientists, and a delighted general public. Now published in one giant volume, they are an even greater value, and much more beautiful. New plates have been made of the 300 illustrations by Don Eckelberry (birds), Tabea Hofmann (wild flowers), and Michael Bevans (trees) to bring out even more of their original vivid colors; a new foreword has been written by Mr. Kieran; and a complete alphabetical index makes the combined volume immensely easy to refer to.

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begins with a fairly extensive quotation from the scientific literature, then proceeds to the adventures of a particular, fictitious Eskimo curlew. This species, which at one time filled the skies with tremendous flocks, and which was hunted and persecuted like the passenger pigeon, is now on the verge of extinction. The black-and-white illustrations are lovely, Mr. Bodsworth's writing has charm, and the story he tells is dramatic and moving.

A HISTORY OF BIRDS

By James Fisher, Houghton Mifflin, Boston, Mass., 1954. 7½ x 5 in., 205 pp. Indexed. \$3.75.

When a new edition of "Birds as Animals"—first published 15 years ago—was planned, the author came to the conclusion that a whole new book would have to be written. Indeed, the scope of the subject had so expanded that two volumes were necessary. In this, the first of the two, the serious student will find a mine of information on early ornithological art and literature, on systematics, geographical distribution, evolution, classification, population, cycles, and the effect of man on the numbers of birds.

BIRDS OF THE SUDAN

By Francis O. Cave and James D. Macdonald, Oliver & Boyd, Edinburgh, Scotland, 1955. 9 x 6½ in., 444 pp. Illustrated. Indexed. 45s (about \$6.50).

This is a field guide (though of somewhat bulky proportions) to a vast area of most interesting birdlife. A first section gives the general characteristics of each family with a line drawing; the second part is devoted to detailed descriptions of the species and their distribution. Information on habits and food is given when these are known, and keys are provided in those instances where a family is represented by more than two species. Numerous drawings and 12 excellent color plates illustrate the text.

HOW TO WATCH BIRDS

By Roger Barton, McGraw-Hill Book Company, New York, 1955. 8½ x 5½ in., 229 pp. Illustrated. Indexed. \$3.50.

This avocational guide will answer many more questions than its title suggests. The opening chapter analyzes the urge which is now followed by millions in the U. S. alone, and succeeding ones give pointers on where birds can be seen, approached, identified, and studied. Information will be found also on attracting birds to a garden, on binoculars, field trips, research projects, photography, etc. Lists of books suggest further readings. Mr. Barton is President of the New Jersey Audubon Society.

MAMMALS: A GUIDE TO FAMILIAR AMERICAN SPECIES

By Herbert S. Zim and Donald F. Hoffmeister, Simon & Schuster, New York, 1955. 6½ x 4½ in., 160 pp. Illustrated. Indexed. Paper, \$1.00. Cloth, \$1.95.

This addition to the Golden Nature Guides has the same excellence as those already published. Covering 218 species of mammals found in the United States and Canada, it will help the beginner in identifying the most common. A colored key and "family tree" will familiarize the novice with features to look for. Colored illustrations are supplemented by short descriptions. Habits are summarized, habitat preferences are outlined, and maps show ranges of distribution.

THE FERNS AND FERN ALLIES OF MINNESOTA

By Rolla M. Tryon, Jr., University of Minnesota Press, Minneapolis, Minn., 1954. 8½ x 5½ in., 166 pp. Illustrated. Indexed. Paper, \$2.75. Cloth, \$4.00.

This handbook for identification describes over 100 different kinds of ferns and fern allies occurring in Minnesota. An introductory chapter tells how to collect and preserve specimens and gives advice on how to transplant ferns to the home garden. Keys to families and detailed descriptions are supplemented by four halftone plates and numerous black-and-white drawings. The habitat and world-wide distribution of each species are given.

THIS IS DINOSAUR: ECHO PARK LAKE AND ITS MAGIC RIVERS

Edited by Wallace Stegner, Alfred A. Knopf, Inc., New York, 1955. 10½ x 7½ in., 97 pp. Illustrated. \$5.00.

The purpose of this timely book is to describe the beautiful scenery and recreational and cultural resources to be found in the Dinosaur National Monument. If the Bureau of Reclamation should win in the prolonged national controversy over Echo Park, several of the canyons in Dinosaur would be dammed and one of the last unspoiled wilderness areas of North America would be impaired. The superb photographs and documented text by a number of authorities provide the best sort of propaganda for the defenders of this Eden.

GARDENING MADE EASY

By Arthur J. Pratt, Hearthside Press, New York, 1955. 7 x 9½ in., 153 pp. Illustrated. Indexed. \$2.95.

Gardening and cooking have great similarity as explained in books for beginners: both stress planning, preparation, and presentation; both give rec-

ipes; both mention the pitfalls to avoid and the safeguards against them. The time required is given—and the toil involved is minimized. When everything turns out as it should, kitchen or garden smell good, and however strenuous it all has been, the fleeting product has been worth it. This little book will make the would-be gardener's mouth water. As the title suggests, it all seems very easy and lots of fun. It is a pity that birds are not mentioned, but when they arrive perhaps the neophyte will discover for himself that they can help him save on insecticides.

THE DANCING BEES: AN ACCOUNT OF THE LIFE AND SENSES OF THE HONEY BEE

By Karl von Frisch, Harcourt, Brace, New York, 1955. 8 x 5½ in., 183 pp. Illustrated. Indexed. \$4.00.

Through the ages, many primitive tribes and some religious sects have

adored the sun as the source and symbol of life. For bees this is true indeed: without the sun, they could neither find their way back to the hive nor communicate their knowledge of a food supply site to their fellow workers. Dr. von Frisch, a world authority on the subject, discovered through years of study the astonishing fact that bees use the sun as a compass to fix their position, taking into consideration the time of day, and that they perform dances at an angle with the position of the sun in order to direct others to the succulent flowers they have discovered. The book, however, is not confined to these extraordinary phenomena; as the life of the bee is related, its senses—sight, smell, taste, hearing, and touch—are described. One marvels at the ingenuity and imagination with which the tests leading to this knowledge have been devised. In clear and simple style, not devoid of gentle humor, the author relates his experiments.

FIELD TRIPS—THE KEY TO NATURE STUDY—Continued from Page 151

Platt's list of things to touch, taste, smell, and feel in his "American Trees."

8. Teach some principles of conservation on every trip.

Make it clear that you are looking at plants not picking them (except fungi, weeds, etc.). Point out food and cover for wildlife, the naturalness of predation; find interrelationships, examples of soil erosion, damage to trees through careless use of knives and axes, and through trampling of roots. How do birds and other animals make a living? What TYPES of plants and animals are present? Note how each is a specialist.

9. Seek out new places, new experiences.

Enlist the aid of professors, museum workers, woodsmen, etc., in locating swamps, wild gardens, quarries, caves, and wilderness areas. Often, though, a person who follows these "rules" will make a better leader than the professional scientist. Discover the best places and times to observe the migrations of frogs and toads, spawning of fishes, the blossoming of trees, or growth of fungi.

10. Don't hesitate to lead because you are not an expert.

Don't be afraid to say "I don't know," but direct attention to things you do know. Look up answers with group during a trip or upon your return. Improve your leadership ability through courses at Audubon Camps. Help train additional leaders to share in this rewarding job.

In conclusion, let me say that in our contacts with scores of local Audubon Societies and other nature and conservation groups we have come to think of field trip programs as the best barometer of a club's effectiveness.

Those groups which have an enterprising, hard-working field trip committee are building strong clubs—organizations with good attendance, that make news and attract new members (especially young ones), that undertake to protect and preserve the best natural features of the local landscape, and which more intelligently and more forcefully support sound conservation programs.

Yes, indeed, field trips are the key to nature study and to real conservation!

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Children's Books

By Dorothy Edwards Shuttlesworth



THIS spring we had the privilege of accompanying a science-study supervisor on her monthly visits to the classes of an elementary school. The day was indeed a rare experience in observing nature study. We found some of the older children supervising the incubation of the eggs of two species of ducks, younger ones trying out a "balanced aquarium" versus a fish tank without plants, others experimenting with magnets, still others reporting on the signs of spring they had noticed on a walk around the school. Every room had its project or activity, and almost every child was bursting with eagerness to talk about his special interest.

Look up, investigate, experiment! — Inquiring minds were being developed that day almost as obviously, it seemed, as the leaves and flowers outside were expanding in the spring sunshine. The Supervisor told nothing in direct statement. Practically everything she had to say was in the form of a question. Classroom, school, and main libraries would be busy with children from second grade up hunting material to answer the points that were of particular interest to them.

It is a fortunate child who has not only the public libraries for reference, but book shelves of his own. Even when community and school are well equipped, there is bound to be a waiting list for books that concern the current interest of a class or group of classes. And besides the convenience of having informative books at home, the pride of ownership usually is stimulating to children. "I have a book I can bring to school." "I have something to contribute." Any boy or girl who is able to participate in this way is apt to become a good student — of nature and of life. Parents can make few investments which for so little give the great returns of knowledge, pleasure, and initiative that may be derived from good books.



HORSES ROUND THE WORLD

By Jean Slaughter, J. B. Lippincott Company, New York and Philadelphia, 1955. 11 x 7 in., 88 pp. \$3.00.

For child or adult who, in the words of the old song, is "crazy over horses," here is a really exciting collection of pictures. Assembled from many parts of the world, the photographs show horses in sport, in the circus, at work, in war, and otherwise involved in the activities of man, as well as being their natural selves. Brief captions in a vocabulary simple enough to be read by 10-year-olds explain and amplify the pictures. Miss Slaughter, who compiled the photographs and wrote the text, is a horse-woman of considerable note, and her sympathetic understanding of these remarkable animals is evident in the whole tone of the book.

THE TREASURES OF THE EARTH

By Fred Reinfeld, Sterling Publishing Company, New York, 1954. 10 x 7 in., 154 pp. Illustrated with photographs. \$2.95.

It is not easy to treat geology and its allied sciences such as mineralogy, oceanography, and meteorology in a "popular" manner. However, Mr. Reinfeld has done a fine job of making these subjects as lively and exciting as they should be. He does so by concentrating on the highlights and omitting technical data that many an adult as well as boys and girls might label "dry." The result is an "introduction," but a complete and absorbing one. How the age of rocks may be determined, how mountains and volcanoes developed, how the remains of dinosaurs and other fossils help tell the story of rocks, and how glaciers and

caverns came into being are just a few of the many subjects discussed. Many photographs illustrate the text, which was checked for scientific accuracy by Mineralogist Frederick H. Pough.

BARN SWALLOW

By Paul McCutcheon Sears, Holiday House, New York, 1955. 8 1/4 x 6 1/4 in., 46 pp. Illustrated by Walter Ferguson. \$2.00.

A few years ago an article on children's nature books published in a school science magazine mentioned the fact that although books on animals in general and on mammals were numerous, life histories of common birds were regrettably few. Since that time the situation has decidedly improved as a number of bird books have been published. The most recent is this life-cycle story of the barn swallow in which the adventures of one bird's first year are recorded, dramatically and accurately. Young readers will be particularly intrigued by this lovely feathered creature which is a master of stunt flying, which "on the wing" eats, drinks, courts its mate, and, in fact, does nearly everything but sleep in the air. They will be fascinated, too, by its remarkable 6,000-mile journey from our own farms, towns, and villages over ocean, mountains, and jungles to Argentina. Delightful three-color illustrations contribute greatly to the book's appeal.

STUDIES IN NATURE

By Gold Collins Geake, The Botanic Publishing Co., Cincinnati, Ohio, 1954. 11 x 8 1/2 in., 82 pp. Illustrated by Leona Ley. \$2.00.

Here is an informal presentation of a great variety of nature material which grew out of the author's several years' work with Girl Scouts. Her intimate contact with children results in a fine understanding of how to talk with them — even in printed form. We can clearly see Mrs. Geake in her garden sharing with neighborhood boys and girls her knowledge of insects, spiders, birds, and trees. A good supplementary book for elementary science teachers and scout leaders, and youngsters of nine and upward will enjoy it by themselves.

LONG HORN, LEADER OF THE DEER

By Joseph Wharton Lippincott, J. B. Lippincott Company, Philadelphia and New York, 1955. 8 x 5 1/2 in., 128 pp. Illustrated by George F. Mason. \$2.00.

Author Lippincott is a first-rate story teller and, at the same time, an effective conservationist. His tales of creatures in the wilds are always absorbing and exciting. And as a reader becomes a part of the scene and understands the problems, natural and man-made, that

beset animals, he develops—if only subconsciously—an interest in protecting them. In this book a particularly brave and handsome deer is the leading character. His battles with winter's hardships, with a rival buck, and with a lynx are small compared to the danger from men's guns when the hunting season is on. But his instinctive cleverness brings him safely through, and converts at least one hunter to a staunch friend who finds more pleasure in telling about Long Horn's exploits than in trying to shoot him. Fine illustrations by George Mason include a variety of animals, animal tracks, and action pictures.

UNCLE BILLY O'POSSUM

By Robert L. Cherry, *Comet Press Books, New York City, 9 x 5 1/2 in., 149 pp. \$3.00.*

This book is strictly for fun. The animals talk with the vocabulary of humans and the "hero" is a possum that wears a wooden leg. However, the preface serves due notice that this is a story of the Land of Make Believe; "Uncle Billy" was created by the author to amuse his own children. The possum's activities with other woodland creatures and with human acquaintances doubtless will appeal to many younger boys and girls who are more inclined toward fantasy than realism.

CAREERS AND OPPORTUNITIES IN SCIENCE

By Philip Pollack, *E. P. Dutton and Co., New York, 1954. 8 1/4 x 5 1/2 in., 252 pp. \$3.75.*

Boys and girls of high school age who are anxious to chart their courses through college toward a definite career goal, will find this book a gold mine of ideas and information. It not only gives data on the various scientific fields and the courses available at various schools and colleges, but details facts about work in astronomy, conservation, meteorology, and many other scientific occupations. The practical aspects of these careers are given as it surveys the time involved and expenses incurred in each area of preparation; a summary of the average income of scientists in all fields is included. A thought-provoking introduction by Astronomer Harlow Shapley calls attention to our country's dire need for science teachers.

DINOSAURS

By Marie Halun Block, *Coward-McCann, Inc., New York, 1955. 8 3/4 x 6 3/4 in., 48 pp. Illustrated by George F. Mason. \$2.50.*

The keen interest felt by boys and girls in prehistoric animals, particularly dinosaurs, has made itself felt in the publishing world during the past year

with a variety of books featuring the most amazing of all reptiles. Each has contributed to an understanding of the earth before the Age of Man and helped to increase interest in the far-distant past. Where once children found it necessary to hunt in scientific publications to glean bits of information on prehistoric life, they now can have a collection of excellent books on the subject, designed especially for them. Mrs. Block's "Dinosaurs" is the latest of these. It is made especially appealing by George Mason's bold and "convincing" illustrations.

THIS WEEK OUT OF DOORS, A NATURE CALENDAR

By Edward E. Wildman, *Livingston Publishing Company, Narberth, Pennsylvania, 1954. 8 x 5 1/4 in., 202 pp. \$2.75.*

Having a "nature chat" with an informed and imaginative person once a week throughout the year is a most pleasant way of keeping posted on the "doings" of animals and plants and all the natural wonders about us. And this is just what "This Week Out of Doors" gives us an opportunity to do. It had its start as a series of radio talks given for the benefit of children who could not attend school; and the informal quality that made the broadcasts so popular gives the book real charm. Many suggestions for activities connected with nature study are interspersed with the informative material, making this an excellent volume for Scout and Campfire leaders, as well as for individuals of all ages.

TO A DIFFERENT DRUM: The Story of Henry David Thoreau

By Charles Norman, *Harper and Brothers, New York, 1954. 8 1/2 x 5 3/4 in., 113 pp. Illustrated by Margaret B. Graham. \$2.50.*

In these days of atom bombs and economic stress, parents can scarcely avoid having their anxieties touch their youngsters. For boys and girls old enough to begin to comprehend adult problems, the life of Thoreau should be a healthy and relaxing influence. They are bound to be impressed by this man whose deepest satisfactions came from the simple life, for "To a Different Drum" presents him in an inspiring light. No weakling he, who resigned as a schoolmaster rather than flog pupils in the prescribed manner, then opened a school of his own which was well-disciplined—without flogging or threats. He proved he could be practical by becoming a surveyor—and a good one. But the real Thoreau, who was to achieve immortality, built a little cabin in the woods and lived a primitive life there for two years, closely observing nature. One of the many

thoughts to ponder in this book is Ralph Waldo Emerson's comment that, "he (Thoreau) knew how to be poor without the least hint of squalor or inelegance."

WIDE RIVER

By Dorothy Childs Hogner, *J. B. Lippincott, Philadelphia and New York, 1954. 8 1/4 x 6 1/4 in., 64 pp. Pictures by Nils Hogner. \$2.00.*

Though this adventure story of a chipmunk and his neighbors is true-to-life, it somehow has a bit of the feeling of the classic fantasy, "Wind in the Willows." The setting is dramatic and serious for the small creatures of the fields, as prolonged spring rains are causing the river to flood their homes and hunting grounds; but there is humor in the animals' reactions to the situation and to each other. The full-page illustrations will appeal not only to youngsters of six to eight for whom "Wide River" is intended, but to anyone who enjoys delightful nature drawings.

TIKE AND TINY IN THE TETONS

By Frances Joyce Farnsworth, *The University of New Mexico Press, Albuquerque, New Mexico, 1954. 7 3/4 x 5 1/2 in., 162 pp. Illustrated. \$2.00.*

Tike and Tiny are twin bear cubs that live in Grand Teton National Park. Perhaps because they are exposed to campers and other tourists, they talk very much like human children. The book tells a lively story of animal life in a great national park, and enough background material is included so that "Tike and Tiny" becomes a veritable guidebook to one of America's beautiful vacation spots.

FIRST CAMPING TRIP

By C. B. Colby, *Coward-McCann, Inc., New York, 1955. 8 1/2 x 6 3/4 in., 48 pp. Illustrated by the author. \$2.00.*

In some matters it may be most interesting to learn by personal experience, but camping is one where an expert's advice is well worth having before a first "time out." A first camping trip that is thoroughly uncomfortable may well be a youngster's last. This is a bookful of ideas for comfort and safety, whether the novice is spending one night in the woods or going on a more extensive trip where he will need to build lean-to shelters and possibly camp furniture. Each idea is emphasized by a drawing which graphically illustrates the point to be made. Not only is Mr. Colby a camper of wide experience, but he had his material for "First Camping Trip" checked by the camping experts of the Boy Scouts. The reader can feel assured that no fanciful "notions" are included!

Continued on Page 191

Your CHILDREN

By Shirley Miller

IF HAWKS and owls could write letters, those living in Connecticut might well pen thank-you notes to the Audubon Junior Club members in that state who recently took up the cudgels in their behalf. This spring these birds were in desperate peril. Although Connecticut had led the national parade in 1951 by enacting a model law which protected ALL birds of prey in that state, a bill had been introduced in its Legislature in February, 1955, which would nullify this law and allow all hawks and owls to be shot.

The Connecticut Committee for Bird Protection alerted conservationists in the state concerning this situation, including all members of Audubon Junior Clubs, and these children went into immediate action. They wrote their legislators, explaining that hawks and owls play a very important part in the balance of nature; that these birds are already too scarce and that man, himself, would suffer if they were destroyed. They made posters to acquaint others with the problem and displayed these in their schools, local stores, and community centers. They sent notices to their local newspapers and radio stations, protesting the passage of this bill, and wherever possible they talked with the legislators themselves.

We quote a letter from Miss Inez Searle, leader of the Audubon Junior Club in the Hayden School, Windsor, Conn., to the Committee for Bird Protection, as typical of the action taken by hundreds of children in the state:

"The Audubon Junior Club in the H. Sidney Hayden School has written to four senators, talked with principals and classmates and neighbors, placed posters in four store windows in the center of town, and also on the bulletin boards in the school. We are concerned about the bill coming up and sincerely hope it will be defeated. We feel that unless something is done about conservation of wildlife, soon man's foolish destruction will bring hardship to many. With poisons, guns, and traps, these friends of mankind have little chance of survival for generations to come. Mr. Philip Laing (State Senator) lives in Windsor. His daughter is a member of our Audubon Junior Club



Young Gary Shampang, Audubon Junior member from Pittsfield, Massachusetts, is proud of the barred owl that he nursed back to health. Photograph by Vera Fielding.

and she has talked with her father about this bill. We feel we may have helped some to protect these wonderful birds. We especially enjoy the owls found in this area."

Another letter from an Audubon Junior Club in New Haven, written directly to Senator William De Tullio, states the case effectively, as follows:

Hamilton School
155 Hamilton Street
New Haven, Connecticut

Senator William De Tullio
557 Woodward Avenue
New Haven, Connecticut

Dear Sir:

In behalf of the 134 members of the Audubon Junior-Humane Club of Hamilton School, New Haven, we wish to protest the passage of Senate Bill 801, which will permit all of our hawks and owls to be shot.

In this city we have 3,199 members in the Audubon Humane Club. One of the topics we studied this year was helpful birds and animals. Owls and hawks were classified as such.

Hawks and owls are beneficial because they eat harmful rodents—rats, mice, and moles*—animals that destroy crops. We feel they should be protected as they play an important part in the balance of nature. Therefore, we pro-

test against the passage of Senate Bill 801.

Ann Marie Parillo, President
Ralph Buccini, Secretary
Louise Mastriano, Chairman

And to this letter Senator De Tullio graciously replied,

"In response to your letter to me in reference to SB-801, may I say that I will do everything in my power to defeat this bill. It is gratifying indeed to us senators to receive requests from school children requesting our support to pass or defeat a measure whichever the case may be. Please feel free to call on me at any time to help you in any way possible."

Sincerely yours,
(Signed) Senator Wm. De Tullio
The bill was defeated!

*Editors' Note: Moles are not generally inimical to man's interests, and rats and mice, in normal numbers, probably serve a most useful function in providing a food supply for hawks, owls, foxes, weasels, skunks, and other so-called predatory animals. When hawks, owls, and other rodent-eating animals are destroyed, then rodents may become so numerous that much damage to crops will follow. Protection of hawks and owls is a good management practice both for better crops, and for a generally healthier land.

City Child: "Oh, mama, look at the cute green snake."

City Mama: "Put it down right away. It might be just as dangerous as a ripe one."

Missouri Ram-Buller

CHILDREN'S BOOKS—

Continued from Page 189

ANIMALS UNDER THE RAINBOW

By Aloysius Roche, Sheed and Ward, New York, 1954. 8½ x 5¾ in., 173 pp. Illustrated by Agnes Miller Parker. \$2.75.

In the midst of much factual material, legends and fantasy are sometimes refreshing. Here is a delightful collection of legends about animals—some based on historical fact—that have been passed on from one generation to the next for hundreds of years. Father Roche has retold them in this book especially for young people.

THROUGH THE MAGNIFYING GLASS

By Julius Schwartz, Whittlesey House, New York, 1954. 8½ x 5¾ in., 142 pp. Illustrated by Jeanne Bendick. \$2.50.

A few children are fascinated by the revelations made by a microscope when they are barely of school age, but many more are old enough for high school biology before they discover the wonders of magnification. To any one of this latter group, "Through the Magnifying Glass" would be a real boon. It tells in easy and entertaining fashion of the "hidden worlds" in the child's own house or garden—worlds that may be explored with a simple magnifying glass. The wonders to be found in finger-tip designs, in salt crystals, the rings on a fish's scale which reveal its age, the intricate manufacturing plant in the heart of a flower—all can be discovered and appreciated by children of elementary school age. Besides telling of many things that may be found, Mr. Schwartz suggests ways to obtain a magnifying glass with little cost, and explains how to make a viewing stand. Boys and girls who have been inspired by such a book to look for the "almost invisible," have a splendid background for understanding when they come to use microscopes with their powerful combination of lenses.

ROUND ABOUT ME

By Elizabeth B. Jones, The Warner Press, Anderson, Indiana. 11 x 8½ in., 44 pp. Illustrated by photographs. \$1.50.

Parents who are looking for material to link a love of nature with religion will be happy to have this attractive volume to share with their children. Verses from the Psalms are interspersed with poems and the thoughts and wonderings of a child. The feeling of the entire book may be conveyed by a few lines toward its conclusion, "God seems so very, very near me while I am in the woods in winter. . . . Sometimes when I am standing there, it seems the whole woods were filled with prayer; not asking words but softly whispered thank-you's to God for all His goodness and His love."

AFRICAN ANIMALS

By John Wallace Purcell, The Childrens Press, Chicago, Illinois. 8½ x 7½ in., 48 pp. Illustrated by Katherine Evans. \$2.00.

This "True Book" is devoted to many of the beasts that are favorites in zoo and circus. It portrays them in their own homeland giving a suggestion of the enchantment of the Africa that is unspoiled by civilization. The size of the type and larger proportion of text to illustrations suggests this book is for slightly older readers. However, the vocabulary is chosen from the combined word list for primary reading.

101 FAVORITE ANIMALS AND BIRDS

By Diana Thorne, Sterling Publishing Company, New York, 1953. 10½ x 9 in., 140 pp. Indexed. \$2.95.

Under the mistaken notion that it had just come from the library, our daughter's immediate reaction to this book was, "Can we renew it?" It's that kind of a book—one that a child will want to keep as long as possible or, better yet, to own. Diana Thorne's work has been published so widely that countless parents and children must already be familiar with it. Her drawings appear in such magazines as the *American Kennel Gazette* and the *Woman's Home Companion*. She has illustrated numerous books and has made many portraits

of famous pets such as Katherine Cornell's "Flush" and the late President Roosevelt's "Fala." In "101 Favorite Animals and Birds" Miss Thorne has included not only the ever-popular dogs, cats, and horses, but the creatures that children especially enjoy at a zoo. There are also wild mammals of our own fields and forests, and birds are well represented from the mighty albatross to the tiny hummingbird. Brief and brightly-written text accompanying each picture makes this an excellent reference book as well as a miniature art gallery.

TROUBLE AT BEAVER DAM

By Florence Matthews Tchaika, Julian Messner, New York, 1953. 8½ x 5½ in., 62 pp. Illustrated by Feodor Rojankovsky. \$1.60.

A beaver dam that almost causes a train wreck, an alert boy named Johnnie who prevents the disaster, a lone beaver that is overlooked when conservation men move the beaver colony to safer territory, and how Johnnie tames him but then returns him to his family—these are highlights of a suspenseful story designed especially for 7 to 10-year olds. Reading it, they will not only be entertained but will learn much about the social life of beavers. This is one of the excellent Everyday Science Stories which effectively combines adventure and science.

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Books

BOOKS on Birds, Mammals, Natural History subjects. New or out-of-print. Catalogs furnished. Pierce Book Company, Winthrop, Iowa.

THE GREATER YELLOW LEGS

Continued from Page 166

central California, southern Arizona and Texas east to Florida, to Bahamas, and the West Indies. Some have been noted also in Bermuda and even across the Atlantic in the British Isles, whither their long wings seem to carry them easily.

It seems likely that the protection afforded shorebirds may lead eventually to the numerical recovery of the yellow-legs. Already larger flocks gather for migration, particularly in the North, and as they are no longer shot for game, more and more survive the perils of long pilgrimages.

Only a few years ago, while tramping across salt meadows north of Moose Factory on James Bay, some 300 miles below Churchill, I saw a flight which must have been comparable with those common in old times. A cloud of birds kept lifting on the green horizon, too distant for identification, but suggesting a vast concentration of waterfowl. When the birds drifted nearer I saw that they were greater yellow-legs. They were not flying quite so closely as I had surmised, but were in more or less detached companies, battalions, and regiments. All formed parts of one splendid "snipe" division, and all were southward bound, for it was late in August.

I have never observed such a flight anywhere along the Atlantic coast, where small flocks are now the rule. If such big aggregations become common again, and this seems possible, they will add immeasurably to popular interest in wildlife along the shore.

ANSWERS

Answers to "Can You Identify These Mammals?"

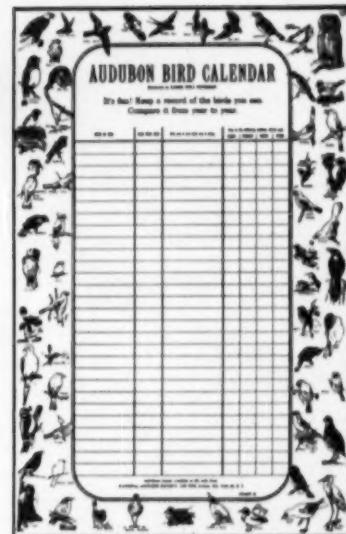
1. Chinchilla.
2. Mountain lion. Also known as cougar, catamount, puma, and panther.
3. Llama.
4. Cheetah.
5. Armadillo. The species in the United States is the nine-banded armadillo.
6. Gnu.
7. Lemming.
8. Moose. Large males or bulls have been known to weigh 1,800 pounds, and a large pair of antlers will weigh 85 pounds.
9. Muskrat.
10. Okapi.

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